UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

WA3019
4-30-01
5e

April 30, 2001

Reply To
Attn Of: WCM-127

FILE COPY

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Ms. Georgia Baxter, Executive Vice President
1700 So. El Camino Real
P.O. Box 5902
San Mateo, CA 94402-0902

Re: Administrative Order on Consent
J.H. Baxter & Company
Arlington, Washington
Docket No. RCRA-10-2001-0086

Dear Ms. Baxter:

Enclosed please find a signed copy of the Administrative Order on Consent (AOC) for the J.H. Baxter facility located in Arlington, Washington. The AOC's effective date is the date of signature, April 30, 2001. I appreciate your cooperation during the negotiations. I look forward to working with you on this important matter.

If you have any questions regarding this matter, please call me at (206) 553-1847 or your staff may call Kim Ogle at (206) 553-0955.

Sincerely,

Richard Albright, Director
Office of Waste and Chemicals Management

Enclosure

cc: Sara Beth Watson, Steptoe and Johnson
Lori Herman, Hart Crowser
Tom Orthmeyer and Mary Larson, J.H. Baxter & Co.
Julie Sellick and Dave Misko, NWRO
Gregory Sorlie, Ecology-Headquarters
Jeanne Tran, NWRO
Ron Lavigne, Washington Attorney General
Kirk Cook and Mary Shaleen-Hansen, Ecology-Headquarters

WA 3019
4/30/01
5e

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 10

IN THE MATTER OF: J.H. BAXTER & CO. Arlington, Washington Respondent Proceeding Under Section 7003 of the Resource Conservation and Recovery Act, as amended, 42 U.S.C. § 6973	ADMINISTRATIVE ORDER ON CONSENT U.S. EPA, Region 10 Docket No. RCRA-10-2001-0086

TABLE OF CONTENTS

		Page
I.	JURISDICTION AND GENERAL PROVISIONS	3
II.	DEFINITIONS	3
III.	PARTIES BOUND	7
IV.	STATEMENT OF PURPOSE	7
V.	FINDINGS OF FACT	8
VI.	CONCLUSIONS OF LAW AND DETERMINATIONS	14
VII.	WORK TO BE PERFORMED	14
VIII.	IMPLEMENTATION OF ALL REQUIRED WORK	22
IX.	INTERIM MEASURES/STABILIZATION	23
X.	SAMPLING/QUALITY ASSURANCE/FIELD ACTIVITIES	25
XI.	PERIODIC REPORTING	27
XII.	EPA APPROVAL OF PLANS AND OTHER SUBMITTALS	27
XIII.	ACCESS TO PROPERTY	29
XIV.	RECORD RETENTION, DOCUMENTATION AND AVAILABILITY OF INFORMATION	30

XV.	NOTIFICATION AND DOCUMENT CERTIFICATION	32
XVI.	COMPLIANCE WITH OTHER LAWS	33
XVII.	DISPUTE RESOLUTION	33
XVIII.	STIPULATED AND STATUTORY PENALTIES	34
XIX.	FORCE MAJEURE	38
XX.	RESERVATION OF RIGHTS	40
XXI.	OTHER CLAIMS	42
XXII.	INDEMNIFICATION	42
XXIII.	INSURANCE	43
XXIV.	FINANCIAL ASSURANCE	43
XXV.	MODIFICATION	45
XXVI.	ADDITIONAL ACTION	45
XXVII.	TERMINATION AND SATISFACTION	46
XXVIII.	PUBLIC COMMENT ON THIS ORDER	46
XXIX.	SEVERABILITY	46
XXX.	EFFECTIVE DATE	46

ATTACHMENTS A - J

FIGURES 1 - 4

TABLES 1 - 6

I. JURISDICTION AND GENERAL PROVISIONS

1. This Administrative Order on Consent ("Order") is entered into voluntarily by the United States Environmental Protection Agency ("EPA") and J.H. Baxter & Co. ("Respondent"). This Order provides for the performance of certain activities by Respondent in connection with the property located at 6520 188th Street NE in Arlington, Washington (the "Facility").

2. This Order is issued pursuant to the authority vested in the Administrator of EPA by Section 7003 of the Solid Waste Disposal Act, commonly referred to as the Resource Conservation and Recovery Act, as amended, ("RCRA"), 42 U.S.C. § 6973. The authority to issue orders pursuant to Section 7003 of RCRA, 42 U.S.C. § 6973 has been delegated to the Director of the Region 10 Office of Waste and Chemicals Management by delegation R10 1281.8.

3. The Director of the Office of Waste and Chemicals Management has determined that the past or present handling, storage, treatment, transportation or disposal of Solid Waste or Hazardous Waste by the Respondent may present an imminent and substantial endangerment to health or the environment.

4. EPA has notified the State of Washington of this action pursuant to Section 7003(a) of RCRA, 42 U.S.C. § 6973(a).

5. Respondent's participation in this Order shall not constitute or be construed as an admission of liability or of EPA's findings or determinations contained in this Order except in a proceeding to enforce the terms of this Order.

6. The Respondent agrees to undertake all actions required by the terms and conditions of this Order. In any action by EPA or the United States to enforce the terms of this Order, Respondents consents to and agrees not to contest the authority or jurisdiction of the Director of the Office of Waste and Chemicals Management to issue or enforce this Order, and agrees not to contest the validity of this Order or its terms.

II. DEFINITIONS

7. Unless otherwise expressly provided herein, terms used in this Order that are defined in RCRA or in regulations promulgated under RCRA shall have the meaning assigned to them under

RCRA or in such regulations. Whenever terms listed below are used in this Order or in the Attachments that are attached to and incorporated in this Order the following definitions shall apply:

a. "Administrative Record" shall mean the record compiled and maintained by EPA relative to this Order.

b. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601, et seq.

c. "Contractor" shall include any subcontractor, consultant, or laboratory retained to conduct or monitor any portion of the Work performed pursuant to this Order.

d. "Corrective Measures" shall mean those measures or actions that can control, prevent, or mitigate the release or potential release of Solid Waste or Hazardous Waste or Hazardous Constituents into the environment.

e. "Corrective Measures Implementation" or "CMI" shall mean those activities necessary to initiate, complete, monitor, and maintain the remedies EPA has selected or may select to protect human health and/or the environment from the release or potential release of Solid Waste or Hazardous Waste or Hazardous Constituents into the environment from the Facility. The CMI requirements are detailed in the CMI Scope of Work included as Attachment E.

f. "Corrective Measures Study" or "CMS" shall mean the investigation and evaluation of potential remedies which will protect human health and/or the environment from the release or potential release of Solid Waste or Hazardous Wastes or Hazardous Constituents into the environment from the Facility. The CMS requirements are detailed in the CMS Scope of Work included as Attachment C.

g. "Data Quality Objectives" shall mean the qualitative or quantitative statements, the application of which is designed to ensure that data of known and appropriate quality are obtained and that data are sufficient to support their intended use.

h. "Day" shall mean a calendar day unless expressly stated to be a Business day. "Business day" shall mean a day other than a Saturday, Sunday, or federal holiday. In computing any period of time under this Order, where the last day would fall on a Saturday, Sunday, or federal

holiday, the period shall run until the close of business of the next Business day.

i. "EPA" shall mean the United States Environmental Protection Agency, and any successor departments or agencies of the United States.

j. "Excess Stormwater", for the purpose of the Excess Stormwater Management Requirements set forth in this Order, shall mean that stormwater collected by Respondent to prevent overflow from any ditch or swale at the Facility.

k. "Facility" shall mean all contiguous property under the control of the J.H. Baxter & Co., at 6520 188th Street NE, Arlington, Washington as described in Attachment H.

l. "Hazardous Constituents" shall mean those constituents listed in Appendix Appendix VIII of 40 C.F.R. Part 261, and any constituent identified in Appendix IX to 40 C.F.R. Part 264.

m. "Hazardous Waste" shall mean hazardous waste as defined in § 1004(5) of RCRA.

n. "Innovative Treatment Technologies" shall mean those technologies for treatment of soil, sediment, sludge, and debris other than incineration or solidification/stabilization and those technologies for treatment of groundwater contamination that are alternatives to pump and treat.

o. "Interim Measure(s)" or "IM(s)" shall mean those actions which can be initiated in advance of implementation of the final corrective action to achieve the stabilization goals of controlling or abating immediate threats to human health and/or the environment, and to prevent or minimize the spread of contaminants while long-term Corrective Measures are being evaluated.

p. "Operation and Maintenance" or "O & M" shall mean all activities required to maintain the effectiveness of the actions as required under the Operation and Maintenance Plan approved or developed by EPA pursuant to this Order.

q. "Order" shall mean this Order and all Attachments to this Order. In the event of conflict between this Order and any provision of any other agreement, order or writing, the terms and conditions of this Order shall control;

r. "Paragraph" shall mean a portion of this Order identified by an Arabic numeral or a letter.

s. "Parties" shall mean the United States and Respondent J.H. Baxter & Co.

t. "Receptors" shall mean those humans, animals, or plants and their habitats which may receive or be affected by releases of Solid Waste or Hazardous Waste from the Facility.

u. "Scope of Work" or "SOW" shall mean the outline of Work Respondent must use to develop Work Plans, reports and other Submittals required by this Order as set forth in this Order including its Attachments. All Attachments and modifications or amendments thereto, are incorporated into this Order and are an enforceable part of this Order.

v. "Section" shall mean a portion of this Order identified by a Roman numeral, unless used to refer to a statutory or regulatory section, or in a legal description of real property.

w. "Site" shall mean the J.H. Baxter & Co. Facility encompassing approximately fifty-two acres of land at 6520 188th Street NE (just southwest of the intersection of 67th Avenue NE and NE 188th Street) in Arlington, Snohomish County, Washington, and all property where Solid Waste or Hazardous Waste or contaminants have come to be located. See Figure 1.

x. "Site Investigation" shall mean the investigation and characterization of contamination including the nature, extent, direction, rate, movement, and concentration of contamination and releases of Solid Waste or Hazardous Waste that have been, or are likely to, be released into the environment from the Facility. The objectives and requirements for the Site Investigation are detailed in Attachments A and B.

y. "Solid Waste" shall mean those solid wastes defined in Section 1004(27) of RCRA, 42 U.S.C. § 6903.

z. "Submittal" shall include any Work Plan, report, progress report, or any other written document Respondent is required by this Order to send to EPA.

aa. "Violation" of this Order shall mean an action or omission, failure, or refusal to act by Respondent that results in a failure to meet the terms and conditions of this Order, including its Attachments.

bb. "Work" or "Obligation" shall mean any activity Respondent must perform to comply with the requirements of this Order, including its Attachments.

cc. "Work Plan" shall mean the detailed plans prepared by Respondent to satisfy the requirements of this Order, including the Attachments. Once approved, all Work Plans shall be incorporated into this Order and become an enforceable part of this Order.

III. PARTIES BOUND

8. This Order applies to and is binding upon EPA, and upon Respondent and Respondent's heirs, successors, and assigns. Any change in ownership or corporate status of Respondent including, but not limited to, any transfer of assets or real or personal property shall not alter Respondent's responsibilities under this Order.

9. Respondent shall ensure that its Contractors and representatives retained to conduct or monitor any portion of the Work performed to this Order receive a copy of this Order and comply with this Order. Respondent shall be responsible for any noncompliance with this Order.

10. The signatory to this Order on Respondent's behalf certifies that he or she is authorized to execute and legally bind Respondent to this Order.

11. Not later than thirty (30) days prior to any voluntary transfer by Respondent of any interest in property at the Site or the operation of the Facility, Respondent shall notify EPA of the proposed transfer. Respondent shall notify EPA of any involuntary transfers within three (3) Business days of Respondent's initial receipt of notice of any involuntary transfer. Not later than five (5) days after any transfer, Respondent shall submit copies of the transfer documents to EPA.

IV. STATEMENT OF PURPOSE

12. In entering into this Order, the objectives of EPA and the Respondent are:

a. to formulate and implement a plan for temporary management of Excess Stormwater at the Site, including collection of Excess Stormwater in tanks, treatment of Excess Stormwater to a concentration no greater than 1 µg/l or part per billion (ppb) pentachlorophenol ("PCP"), and discharge of treated Excess Stormwater in a location and manner least likely to impact the existing contaminated groundwater plume;

b. to perform sampling and analysis of drinking water wells selected pursuant to the EPA-approved Drinking Water Sampling and Alternate Water Supply Work Plan and, if

contaminated water is detected, to promptly provide alternate water, sufficient in quantity and quality to replace the contaminated water, to all affected users;

c. to conduct an investigation to determine the nature and extent of contamination and to report on that investigation and to provide sufficient data to design and implement corrective action or response measures to be taken;

d. to identify and evaluate, in accordance with the results of the investigation and other such data as may be necessary, the corrective action alternatives that can prevent or mitigate any release or migration of Hazardous Wastes or Solid Wastes at or from the Facility.

e. to implement the corrective action or response measures selected by EPA in accordance with the process set forth in this Order.

f. to implement any other Interim Measures that may be required to relieve threats to human health and/or the environment throughout the implementation of this Order.

g. to perform any other activities necessary to address or evaluate actual or potential threats to human health and/or the environment resulting from the release or potential release of Solid Waste or Hazardous Waste at or from the Facility.

V. EPA'S FINDINGS OF FACT

13. Respondent is a California Limited Partnership authorized to do business in the State of Washington.

14. Respondent has operated the Facility located at 6520 188th Street NE, Arlington, Snohomish County, Washington, since 1970. The Facility consists of three parcels. Parcel A is about fifteen acres and occupies the northern part of the Facility. Treated wood storage and the main treatment plants, including butt tank, tanks systems, retorts and drip pads, are located on Parcel A. Parcel B lies to the south of Parcel A and is roughly 30 acres in area. Untreated wood poles are stored and peeled on Parcel B. The third parcel consists of a closed wood waste landfill that occupies the remaining property just west of the south half of Parcel A. See Figure 1.

15. Respondent treats wood to produce utility poles at its Facility. Respondent currently uses PCP/oil solution to treat wood, but used creosote as well as PCP until around 1990.

16. Respondent handles, stores, treats, and/or disposes of Solid Waste or Hazardous Waste at the Facility as a result of its wood-treating operations.

17. From sometime in the 1960s until 1970, Parcel A of the Facility had been used as a pole treatment plant by Ted Butcher, Inc. Prior to that time, Parcel A had been used for agricultural purposes. Parcel B was used for agricultural purposes prior to 1970 when Respondent purchased it. Available information indicates that Butcher utilized a solution of PCP and creosote to treat the poles. When Respondent purchased the property, the equipment used for treating wood at the time included an open full-length thermal treatment vat, a closed thermal treatment retort, and an open thermal treatment butt vat. EPA's November 10, 1984 Superfund Preliminary Assessment of the Site states that Butcher also reportedly used a 20 foot by 20 foot pit to dispose of PCP and creosote.

18. Releases of PCP solution from the butt tank were reported in March 1981 (1400 gallons), February 1989 (200 gallons), and January 1990 (2,000 gallons).

19. The area around the Facility is mixed residential, recreational and industrial. There is a residence surrounded on three sides by the Facility on the Facility's east boundary, residences across the railroad tracks and street to the east of the Facility, and residences north and southeast of the Facility. In addition, there is a mobile home park northwest of the Facility and a ball park to the west of the Facility. There is a boat manufacturer to the south and the airport to the west.

20. Private drinking water wells provide the source of water for some residences near the Facility.

21. A drinking water supply well for the City of Arlington is located less than half a mile to the west of the Facility.

22. The Facility and surrounding area are nearly flat and are near the eastern edge of the Marysville Trough, a long flat-bottomed valley extending from the Stillaguamish River flood plain south toward the City of Marysville. The Marysville Trough is bordered by uplands to the east (Getchell Hill Plateau) and to the west (Tulalip Plateau). See Figure 2. The geologic deposits that exist in the Marysville Trough are primarily composed of permeable sands and gravels and comprise the aquifers which are predominately used locally as a drinking water source.

23. The general groundwater flow within the Marysville Trough is divided. This divide appears to occur somewhere in the vicinity of the Facility. From the divide, groundwater flows northward toward Portage Creek and the Stillaguamish River and southward toward Marysville and the Snohomish River. See Figure 3.

24. The area is drained by numerous tributaries to Quilceda Creek that flow southward to the Snohomish River and by Portage Creek that flows westerly to the Stillaguamish River. There is generally little actual runoff in the area, however, because the land is flat and most rainfall infiltrates directly into the ground. The estimated, average precipitation in the area is 46 inches per year and the estimated, average infiltration rate in the area is 27 to 30 inches per year.

25. The National Marine Fisheries Service has designated the Snohomish River, including its tributaries, as critical habitat for Chinook Salmon. (February 16, 2000, 65 Fed. Reg. 7764-7787) Endangered and threatened species which have been listed pursuant to the Endangered Species Act exist within this area, including salmonids, bull trout, and wintering eagles.

26. Infiltration of rainfall at the Facility is impeded by surface soils which historically caused ponding to occur. In order to avoid excessive ponding of water at the Facility that might interfere with operations, the Respondent took steps to facilitate infiltration of the stormwater into the ground. Respondent first installed infiltration or french drains to facilitate the infiltration of the stormwater into the ground in March 1991.

27. On or about June 6, 1994, The Washington State Department of Ecology ("Ecology") issued a permit that authorized Respondent to discharge certain stormwater to the groundwaters of the State in accordance with the conditions of its permit. That initial permit required Respondent to conduct monitoring of the stormwater and groundwater throughout the Facility and submit regular discharge monitoring reports to Ecology.

Stormwater Data

28. Analysis of unfiltered stormwater entering the french drains on the side of the Site on which treated wood is stored (Parcel A) showed concentrations of PCP ranging from 0.8 to 960 µg/L or ppb. Dioxin in unfiltered stormwater from Parcel A ranged from 0.36 to 13568 pg/L. See results

in Table 1 and Figure 1 for stormwater sampling locations.

29. Analysis of unfiltered stormwater entering french drains on the side of the Facility used for storage of untreated wood (Parcel B) showed concentrations of PCP ranging from 7 to 73 µg/L. See results in Table 2 and Figure 1 for sampling locations.

Groundwater Data

30. PCP has been detected in levels up to 58,000 µg/L or ppb in the ground water (or product) in boring BT-S-GW under the Butt Treating Plant area at the Facility. Groundwater monitoring at the Facility has also shown dissolved PCP in other monitoring wells, with concentrations ranging up to 870 µg/L in monitoring well MW-3. See PCP data in Table 3 and Figure 1 for groundwater monitoring locations.

31. Groundwater monitoring at the Facility has shown dioxin, reported in TEF equivalent, ranging from 0.0745 to 1056 pg/L. See Table 4.

32. The groundwater into which the stormwater at the Facility infiltrates is an underground source of drinking water.

Soil Data

33. On March 25, 1992, Ecology conducted sampling in conjunction with the 1992 "J.H. Baxter, Arlington Site Hazard Assessment". Four soil samples were obtained, two from around the drip pads adjacent to the retorts, one from the south end of the treated wood storage area (Parcel A) and one from the north end of the treated wood storage area. Ecology reported various polycyclic aromatic hydrocarbons (PAHs) and other polychlorinated compounds, including PCP, present in the soil. The results of the analysis of these samples showed PCP up to 1,900,000 µg/kg. The report also states that, "[a]ll surface soil samples indicated "penta" in excess of 6000 µg/kg [or ppb]."

34. During inspections of the Site on August 16, 1999, and November 17, 1999, EPA observed staining adjacent to the drip pads in the main treatment plant area of the Facility (Parcel A). During the November 17, 1999 inspection, EPA took samples in the vicinity of the drip pads. Results of the analysis of sediment samples collected showed concentrations of PCP in sediments along the aprons of 9,600 µg/kg or ppb and 11,000 µg/kg or ppb.

35. Analysis of surface and subsurface soil samples obtained during investigative work performed in the fall of 1999 and the winter of 2000 by Respondent is presented in the March 10, 2000, "Draft Remedial Investigation Report, J.H. Baxter Arlington Plant, Arlington, Washington." See Figure 4 for soil sampling locations. PCP concentrations detected by Respondent in a sample of surface soil taken between 2.5 and 4 feet below ground surface ranged up to 110,000 µg/kg. PCP concentrations detected in subsurface soils range up to 1,400,000 µg/kg or ppb. See PCP results for soil in Tables 5 and 6.

36. Dioxin results, reported as TEF equivalent, in the surface soils range from 1161 to 8248 ng/kg. Dioxin results for subsurface soils range from 79 to 7092 ng/kg. See results in Tables 5 and 6.

Current Conditions

37. On or about April 12, 2000, Ecology issued an Administrative Order to Respondent finding, among other things, that the french drains at the Facility are prohibited underground injection control wells and requiring Respondent to cease all injections of stormwater or other fluid and to seal all french drains on the side of the Facility used for storage of treated wood (Parcel A).

38. As a result of the requirement of the April 12, 2000 Administrative Order issued by Ecology, Respondent anticipates that its Facility will be inundated by stormwater. Specifically, Respondent anticipates that the railroad spur to the kilns, the valve pit under the retorts, the drip pad and the tank farm may flood with stormwater during the winter rainy season. The untreated wood side, or Parcel B, is the part of the Facility with the lowest elevation. Given the additional contribution of PCP into the environment that would result if the treatment plant flooded, significant environmental impact is anticipated if flooding of the treatment plant occurs.

39. Respondent is subject to an Agreed Order with Ecology that is dated June 30, 1999, and is issued pursuant to the Model Toxics Control Act or MTCA. The investigation conducted pursuant to the Agreed Order was a focused investigation to evaluate the potential sources to observed groundwater contamination and to identify contamination issues that need to be addressed. The work performed under the Agreed Order was not a comprehensive, detailed study of general site conditions. The information collected to date is insufficient to assess the nature and extent of contamination.

Examples of additional information that is needed include 1) the depth of the groundwater aquifer and any aquitard; 2) the extent of contamination of the stormwater, surface water, groundwater and soil throughout the Facility and off-site; and, 3) analysis of effects on current and potential Receptors. In addition, of the private drinking water wells that are in use, only one sample has been collected and analyzed for PCP. (The Thomco well at 18930 67th Ave. NE was sampled in 1999 and no PCP was detected.)

40. Additional investigation of all media is needed to assess the conditions at the Site and to determine the nature and extent of the contamination at the Site.

41. Light non-aqueous phase liquid ("LNAPL") is known to exist in the subsurface.

42. Hazardous Wastes, including Hazardous Constituents have been detected in stormwater, soils and groundwater on and beneath the Facility.

43. The EPA Safe Drinking Water Act maximum contaminant level ("MCL") for PCP is 1 µg/L.

44. PCP is a man-made pesticide that does not occur naturally in groundwater or soil. Exposure to PCP may cause serious adverse health consequences such as contact dermatitis, and damage to vision. Upon ingestion, PCP may cause damage to the lung, liver, kidneys, blood, nervous system, immune system and gastrointestinal tract. Inhalation of PCP can result in acute poisoning, centering on the circulatory system with possible accompanying heart failure. PCP has been classified by the EPA as a probable human carcinogen.

45. Dioxins are complex isomeric mixtures that originate from combustion sources such as fly ash from municipal garbage incinerators, technical-grade PCP, and other sources. Limited toxicological information is available for developing toxicity factors for each isomer, but what is known indicates that the 2,3,7,8-TCDD congener is the most potent. Certain dioxins have been reported to cause developmental toxicity in fish, birds and mammals and has been linked to birth defects in mice. Certain dioxins are classified as a human carcinogens.

46. Based upon the information available to EPA regarding the contamination at the Site, EPA has determined that there is a potential threat to human health from exposure to drinking water

contaminated with PCP and dioxin. There may also be threats to human health and the environment from exposure to PCP and dioxin in soil and surface water and from other Hazardous Constituents.

VI. CONCLUSIONS OF LAW AND DETERMINATIONS

47. Based on the Findings of Fact set forth above, and the Administrative Record supporting this Order, EPA has determined that:

a. Respondent is a "person" as defined in Section 1004(15) of RCRA, 42 U.S.C. § 6903(15).

b. PCP and dioxin detected in the environmental media at the Site are "hazardous wastes" as defined in Section 1004(5) of RCRA, 42 U.S.C. § 6903(5), or "solid wastes" as defined by Section 1004(27) of RCRA, 42 U.S.C. § 6903(27).

c. Solid Wastes or Hazardous Wastes have been and/or are being handled, treated, stored, or disposed of by Respondent within the meaning of Section 7003 of RCRA, 42 U.S.C. § 6973.

d. The presence of Solid Wastes and/or Hazardous Wastes in the soil, stormwater and groundwater at the Site resulted from the past or present handling, treatment, storage and/or disposal of Solid Wastes and/or Hazardous Wastes by Respondent at the Facility.

e. Conditions at the Site may present an imminent and substantial endangerment to health or the environment, within the meaning of Section 7003 of RCRA, 42 U.S.C. § 6973.

f. The actions required by this Order are necessary to protect health or the environment.

VII. WORK TO BE PERFORMED

49. Project Managers/Contractors/Communication:

a. All activities required of Respondent under this Order shall be performed only by well-qualified persons, who possess all necessary professional licenses required by federal and state law. All Work conducted under this Order shall be performed in accordance with prevailing professional standards and shall be under the direction and supervision of qualified personnel. Respondent shall designate a Project Manager who shall be responsible for administration of all the

Respondent's actions required by this Order. To the greatest extent possible, Respondent's Project Manager shall be readily available during all Work to be performed pursuant to this Order. Within seven (7) Business days after the effective date of this Order, Respondent shall notify EPA in writing of the names, titles and qualifications of Respondent's selected Project Manager, any other reasonably identifiable key personnel of any Contractors to be used in carrying out Work required by this Order, and any reasonably identifiable personnel who will collect samples at the Site. Key personnel shall include those individuals with significant responsibility for the design or oversight of the Work to be performed by this Order. EPA retains the right to disapprove of the selected Project Manager, or any key personnel of a Contractor retained by Respondent, and personnel who collect samples. In the event that EPA disapproves of a selected Project Manager, key personnel of a Contractor, or personnel who collect samples, EPA shall notify Respondent in writing of the disapproval and the reasons for the disapproval. If EPA disapproves of a selected Project Manager, key personnel of a Contractor, or personnel collecting samples, Respondent shall retain a different Project Manager, Contractor, or sample collector within a reasonable period of time, not to exceed fifteen (15) Business days following EPA's disapproval and shall notify EPA of the name and qualifications of the new Project Manager, Contractor or sample collector within three (3) Business days of retention. If EPA still disapproves, or if EPA later disapproves of the personnel selected during the performance of the Work, EPA may exercise its right to perform any or all of the Work required by this Order and to seek reimbursement of its costs from Respondent pursuant to statutory authorities. If EPA does exercise its right to perform any or all of the Work required by this Order, EPA will attempt to provide Respondent notice before performing such actions.

b. During the course of the Work conducted pursuant to this Order, Respondent shall notify EPA in writing of any changes or additions to the Project Manager or any key personnel of a Contractor, or personnel who collect samples, providing names, titles and qualifications. Such notification shall occur at least five (5) days prior to such change or addition and EPA shall have the same right to disapprove changes or additions to such personnel as it has regarding the initial notification.

c. Receipt by Respondent's Project Manager of any notice or communication from EPA relating to this Order shall constitute receipt by Respondent, except for notices regarding disapproval of the Project Manager, which shall be sent directly to Georgia Baxter, Executive Vice President, J.H. Baxter & Co.

d. EPA has designated Kimberly Ogle as its Project Manager. Respondent shall direct all Submittals required by this Order to Kimberly Ogle at the U.S. Environmental Protection Agency, Region 10, Mail Stop WCM-126, 1200 Sixth Avenue, Seattle, Washington 98101. EPA's Project Manager may be changed. Respondent will be notified in writing if such a change does occur.

50. Excess Stormwater Management Requirements:

a. Within thirty (30) days of the effective date of this Order, Respondent shall submit for EPA review and approval an Excess Stormwater Management Plan. The Excess Stormwater Management Plan shall describe the tasks necessary for the collection of Excess Stormwater and operation of an interim Excess Stormwater management system in compliance with the following requirements and containing the following information:

i. The regulations at 40 C.F.R. Part 265, Subpart J and Subpart I, except §§ 265. 197(c) and 265.200 and the provisions of § 265.192 to the extent that they require reviews, inspections, and/or certifications by an independent qualified professional engineer or an independent qualified installation inspector provided that these same reviews, inspections, and/or certifications are performed by Respondent's staff or consultants who are qualified, registered professional engineers or, where and as allowed by the provisions of § 265.192, qualified installation inspectors.

ii. Clearly mark and make visible for inspection the date upon which each period of accumulation begins on each container and tank;

iii. Clearly label or mark each container and tank used to accumulate the Excess Stormwater with the words "Contains Contaminated

Stormwater";

iv. The regulations at 40 C.F.R. Part 265, Subparts C and D, § 265.16 and, § 268.7(a)(4);

v. Treat the Excess Stormwater to no greater than 1 µg/L PCP prior to discharge;

vi. Analysis to confirm that Excess Stormwater has been treated to no greater than 1 µg/L PCP before discharge; and,

vii. Discharge treated Excess Stormwater in a location and manner least likely to impact the existing contaminated groundwater plume or, in the alternative, disposal off-site.

b. Respondent must comply with the Excess Stormwater management requirements set forth Paragraph 50. a. above until September 2002.

c. The Excess Stormwater Management Work Plan shall also include a schedule for all activities, including the submission of an Excess Stormwater Management Report. The Excess Stormwater Management Report shall be submitted sixty (60) days after EPA approval of the Corrective Measures Implementation Plan, unless otherwise specified by EPA. The contents of the Excess Stormwater Management Report shall be proposed in the Excess Stormwater Management Work Plan and at a minimum shall document Respondent's compliance with the requirements set forth in this Order for the collection and management of Excess Stormwater, operation and maintenance of the Excess Stormwater treatment system, and disposal of Hazardous Waste generated by the treatment of Excess Stormwater.

51. Drinking Water Sampling and Alternate Water Supply Requirements:

a. Within fifteen (15) days of the effective date of this Order, Respondent shall submit for EPA review and approval a Drinking Water Sampling and Alternate Water Supply Work Plan. The Drinking Water Sampling and Alternate Water Supply Work Plan shall describe tasks necessary and include a schedule for the initial sampling and periodic re-sampling of every water supply well to the north of the Facility in the area bounded between 67th Avenue NE and the western edge of

Section 15, up to the bluff of the Portage Creek basin until the bluff levels out then south to 204th Street and east to 67th Avenue NE; all the wells along either side of 67th Avenue NE from 188th Street NE to the first well south of 180th Place, and all the supply wells in Section 22 except that portion excluded as depicted on the map attached to this Order (Attachment J), and any other additional well determined to be necessary by EPA. Wells to be sampled must include all wells that might be used for drinking water. The Drinking Water Sampling and Alternate Water Supply Work Plan must 1) set forth the basis for excluding any water supply wells that are within the defined area in this Paragraph for the initial sampling effort; 2) provide documentation of all efforts to determine the existence of water supply wells not catalogued in Ecology well log files; and 3) specify the methodology for determining the location of each drinking water well required to be sampled.

b. Analyses of samples of drinking water wells collected during the initial sampling shall include, at minimum, chlorinated phenols (PCP and tetrachlorophenol). The scope, frequency and parameters of the periodic re-sampling (any sampling after the initial sampling) of the wells in the area defined in Paragraph 51.a. above is to be determined by EPA based upon the initial data and the results of the Site Investigation as it is developed, or based upon the provision of alternate water supply to the well users. At a minimum, the Drinking Water Sampling and Alternate Water Supply Work Plan shall include the procedures necessary for collecting and analyzing unfiltered, untreated samples of each well included in the area defined in Paragraph 51.a. above, and any other additional wells later determined by EPA to be included in the periodic sampling effort, for chlorinated phenols (PCP and tetrachlorophenol) no less than semi-annually.

c. Validated sample results shall be provided to all well users, with a copy to EPA's Project Manager simultaneously, as soon as possible, but no later than thirty (30) days from the date of sample collection. A summary of the results shall also be included in the periodic reports to EPA under Section XI (Periodic Reporting).

d. In the event that PCP is detected in any well, the contaminated well shall be sampled no less than quarterly, unless otherwise determined by EPA.

e. The Drinking Water Sampling and Alternate Water Supply Work Plan shall

describe tasks necessary and include 1) a schedule for provision of alternate drinking water (such as bottled water) to all of the users of every well contaminated with PCP at detectable levels; 2) full replacement of water used for any purpose (a "whole house" safe water supply for the residence or other building or location) for any well at which PCP exceeds 1.0 µg/L; and 3) description of other response actions that may be appropriate (e.g. shutting off water to public drinking fountain).

f. In the event that provision of alternate water supply is required under this Paragraph 51., Respondent shall also document its acquisition and the provision of alternate water and provide that documentation to EPA as part of its monthly reporting obligation under Section XI (Periodic Reporting) of this Order. For example, if Respondent purchases bottled water, Respondent shall provide to EPA all purchase receipts and/or invoices showing how much bottled water was purchased and Respondent's expenditures for bottled water during the period covered by the report.

g. In the event that analysis of groundwater samples collected from any well available for human consumption are contaminated with PCP above 1 µg/L (ppb), Respondent shall provide signs that may be posted at these locations by the property owner within seven (7) days of the date that Respondent obtains validated sample results. Respondent shall provide a sign for each well, water tap, spigot, water hydrant, public toilet, water cooler, and any other location where water may be obtained for human consumption. The signs to be posted shall be at least six (6) by 12 (twelve) inches, and shall be made of weatherproof material in white or brightly colored background with large, clearly contrasting lettering. The signs shall state in English or any other language specified or requested by the well user(s):

"Warning: This water is contaminated and unsafe for consumption. Do not drink."

h. Provision of alternate water, and sampling and analysis of each well required to be sampled (as adjusted by EPA as described in Paragraph 51. b. above) shall continue until no PCP is detected in any well continuously for a two year period. If PCP continues to be detected in any well, then Respondent must comply with the requirements of Paragraph 51. a. through g. for all wells required to be sampled until the Corrective Measures Implementation Report is approved by EPA or until determined by EPA to be no longer necessary.

i. The Drinking Water Sampling and Alternate Water Supply Work Plan shall also include a schedule for all activities, including the submission of a Drinking Water Sampling and Alternate Water Supply Report. The Drinking Water Sampling and Alternate Water Supply Report shall be submitted thirty (30) days after the submission of the Corrective Measures Implementation Report, unless otherwise specified by EPA. The contents of the Drinking Water Sampling and Alternate Water Supply Report shall be proposed in the Drinking Water Sampling and Alternate Water Supply Work Plan, but at minimum shall document Respondent's compliance with the requirements set forth in this Order.

52. Site Investigation:

a. Within forty-five (45) days of the effective date of this Order Respondent shall submit, for EPA review and approval a Site Investigation Work Plan, as more fully described in Attachment B. The Site Investigation Work Plan must meet the objectives and general requirements set forth in Attachment A and shall be developed in accordance with Attachment B. The Site Investigation Work Plan shall include provisions for determining the nature and extent of contamination in all media at the Site, and a schedule for all activities and Submittals.

b. The Site Investigation Work Plan shall include a conceptual Site model in accordance with Attachment G.

c. The Site Investigation Work Plan shall include a Sampling and Analysis and Data Management Plan to document all sampling, monitoring, analytical procedures. This Sampling and Analysis and Data Management Plan shall be developed to ensure that all information, data, and resulting decisions are technically sound, statistically valid and properly documented. See Attachment C.

d. The results of the Site Investigation shall be submitted for EPA review and approval in a Site Investigation Report to be submitted in accordance with the schedule contained in the Site Investigation Work Plan.

e. EPA acknowledges that Respondent has previously collected information and data that may be appropriate for inclusion in the Work required by this Paragraph. This information and

valid data previously collected by Respondent may be included in the Work required by this Order, subject to review and approval by EPA.

53. Corrective Measures Study:

a. Within sixty (60) days after Respondent receives notice of EPA's approval of the final Site Investigation Report, Respondent shall submit a Draft Corrective Measures Study ("CMS") Report to EPA. The Draft CMS Report shall identify, evaluate and recommend alternative Corrective Measures to address the releases that have been identified at the Site and shall be developed in accordance with Attachment D and be subject to EPA review and approval.

b. After EPA issues its approval or modification and approval of the Draft CMS Report, EPA will provide the public with an opportunity to submit written and/or oral comments and an opportunity for a public meeting regarding EPA's proposed cleanup and performance standards, the Draft CMS Report, and EPA's justification for choosing the Corrective Measures EPA selects (the "Statement of Basis").

c. Following the public comment period, EPA may direct Respondent to finalize the CMS Report incorporating comments received from EPA and require Respondent to implement the recommended Corrective Measures contained in the EPA-approved Corrective Measures Study, or require Respondent to perform additional Corrective Measures studies. Within thirty (30) days of receipt of EPA's notice directing Respondent to finalize the CMS Report, Respondent shall submit a Final CMS Report.

d. EPA will review and approve the Final CMS Report. Upon approval or modification and approval of the Final CMS Report, EPA will notify Respondent of the final cleanup standards, final performance standards, and approved Corrective Measures.

54. Corrective Measures Implementation:

a. Within sixty (60) days after Respondent's receipt of written notification of EPA's approval or modification and approval of the Final CMS Report and selection of the Corrective Measures, Respondent shall submit, for EPA review and approval, a Corrective Measures Implementation ("CMI") Plan. The CMI Plan and other CMI requirements shall be prepared in

accordance with Attachment E and shall cover the design, construction, operation, maintenance and monitoring of the performance of the Corrective Measures selected by EPA to protect human health and the environment and shall include a schedule for all activities, including Submittals.

b. Notwithstanding any other provision in this Order, the Parties agree that if conditions contained in Paragraph 54.c. below are met and Respondent does not want to implement the final Corrective Measure selected by EPA under consent, Respondent may withdraw its consent to implement said Corrective Measure. To be effective, such withdrawal of consent must be in writing, signed by the company signatory to this Order, and received by the EPA Office of Waste and Chemicals Management Director no later than fifteen (15) Business days from receipt of the final dispute decision by EPA.

c. Respondent's right to withdraw its consent is limited to implementation of the Corrective Measure selected by EPA only, and such right to withdraw shall not accrue until: (1) EPA has selected a final Corrective Measure as provided in this Order; (2) and EPA issues a final decision under the dispute resolution procedures contained in Section XVII. Nothing in this Section shall affect or diminish Respondent's consent to any other provision of this Order, including its obligations hereunder to conduct Interim Measures, an RFI, a CMS, additional work as provided in Section XXVI related to matters other than the Corrective Measures Implementation, or issuance of stipulated penalties as provided for in Section XVIII.

d. As provided in Section XX (Reservation of Rights), EPA retains all authorities it has under RCRA and CERCLA to enforce implementation of the Corrective Measure or conduct response actions related to the Facility, including in the event that Respondent exercises its right to withdraw its consent to implement the Corrective Measures as provided in this Section.

VIII. IMPLEMENTATION OF ALL REQUIRED WORK

55. Except as indicated in this Paragraph, all Work undertaken pursuant to this Order shall be performed in accordance with: the provisions of this Order, including the attached Scopes of Work, and any EPA-approved deliverables and Submittals; RCRA and other applicable laws and their implementing regulations; and applicable EPA guidance documents. The Excess Stormwater

Management required by this Order may be conducted for the period of time specified in Paragraph 50.b., notwithstanding the applicable provisions of RCRA, provided that it is conducted in accordance with the EPA-approved Excess Stormwater Management Work Plan. This provision only applies to that Excess Stormwater that is collected and managed in accordance with this Order. All other stormwater at the Facility is subject to all applicable legal requirements.

56. Each Work Plan shall include a schedule. After EPA approval of a Work Plan, Respondent shall commence Work and implement the Work Plan in accordance with the schedule and provisions approved by EPA.

57. Compliance with OSHA requirements: Each Work Plan shall be accompanied by a Health and Safety Plan to be implemented during any Work performed under this Order and that shall be consistent with applicable Occupational Safety and Health Administration (OSHA) regulations. Respondent may incorporate by reference any previously submitted Health and Safety Plan to meet this requirement in any Work Plan submitted after the initial Work Plan if the OSHA requirements are met. All Work under approved Work Plans shall be consistent with applicable OSHA regulations and state and local regulations.

58. Any deviations from an approved Work Plan must be approved by EPA prior to implementation; must be documented, including reasons for the deviations; and must be reported in the applicable reports, including progress reports.

59. Oral advice, suggestions, or comments given by EPA representatives will not constitute an official approval, nor shall any oral approval or oral assurance of approval be considered binding.

IX. INTERIM MEASURES/STABILIZATION

60. The Respondent shall evaluate existing data and new data as it becomes available and assess the need for and opportunity for Interim Measures through the duration of this Order. Interim Measures shall be used whenever possible to achieve the stabilization goals of controlling or abating immediate threats to human health and/or the environment, and to prevent or minimize the spread of contaminants while long-term Corrective Measures alternatives are being evaluated.

61. In the event Respondent identifies an immediate threat to human health or the

environment at any time while this Order is in effect, Respondent shall within twenty-four (24) hours notify the EPA Project Manager, and shall notify EPA in writing within five (5) days of such discovery describing the immediacy and magnitude of the identified threats and response actions to be taken. This reporting requirement is in addition to, and not in lieu of, reporting under Section 103(c) of CERCLA, 42 U.S.C. § 9603(c), and Section 304 of the Emergency Planning and Community Right-to-Know Act, 42 U.S.C. § 11004, et seq. Upon written request of EPA and in the time period specified by EPA, Respondent shall submit to EPA an Interim Measures Work Plan that includes the elements listed in Paragraph 62 below. If EPA determines that immediate action is required, the EPA Project Manager may authorize Respondent to act prior to EPA's receipt of the Interim Measures Work Plan. Such authorization by the EPA Project Manager will be in writing.

62. If EPA identifies an immediate or potential threat to human health and/or the environment, or determines that Interim Measures are necessary to further the achievement of stabilization goals as identified in Paragraph 60, EPA will notify Respondent in writing. Within twenty (20) days (or by such other date as may be agreed to by the Parties) of receiving EPA's written notification, Respondent shall submit to EPA an Interim Measures Work Plan that identifies appropriate Interim Measures which will mitigate the threat. If EPA determines that immediate action is required, the EPA Project Manager may require Respondent to act prior to Respondent's submission of an Interim Measures Work Plan. Such requirement shall be set forth in EPA's written notification. The Interim Measures Work Plan and activities conducted pursuant to this Order are subject to EPA review and approval. The Interim Measures Work Plan shall include the following sections:

a. Interim Measures Description and Objectives

b. Public Involvement Plan

c. Data Collection Quality Assurance

d. Data Management

e. Design Plans and Specifications

f. Operation and Maintenance Plan

g. Project Schedule

h. Interim Measures Construction Quality Assurance

i. Performance Standards to be used in evaluating the effectiveness of the Interim Measures;

j. Reporting Requirements.

Deviations from these requirements may be made only with prior EPA approval, based on the nature of the Interim Measures. EPA will attempt to promptly review and act upon such requests.

63. If at any time Respondent identifies the need or opportunity to conduct Interim Measures, then Respondent shall submit a written request to EPA for review and approval of the proposed action, unless emergency action is required. Respondent shall secure prior written EPA approval to perform any interim or stabilization measure or other work at the Facility. This requirement shall not apply to normal maintenance and operation activities, to the extent that these activities do not affect interim, stabilization or Corrective Measures, or investigations carried out pursuant to this Order.

64. To the maximum extent practicable, Interim Measures should be consistent with and capable of being integrated into any long-term Corrective Measures at the Facility.

X. SAMPLING/QUALITY ASSURANCE/FIELD ACTIVITIES

65. Each Work Plan shall include a Quality Assurance Project Plan ("QAPP"), for EPA review and approval, addressing quality assurance, quality control, and chain of custody procedures for all sampling, monitoring and analytical activities. Respondent shall follow EPA guidance for sampling and analysis in accordance with "EPA Requirements for Quality Assurance Project Plans" [EPA QA/R-5 (August 1994)], as well as other applicable guidance identified by EPA. EPA guidance documents related to quality assurance and sampling can be found on the Internet at: www.epa.gov/r10earth/offices/oea/r0qahome.htm

66. The name, address, and telephone number of each analytical laboratory Respondent proposes to use must be specified in the applicable Work Plan.

67. All Work Plans required under this Order shall include Data Quality Objectives for each data collection activity to ensure that data of known and appropriate quality are obtained and that data

are sufficient to support their intended use.

68. Respondent shall monitor to ensure that high quality data is obtained by its consultant or contract laboratories. Respondent shall ensure that laboratories used by Respondent for analysis perform such analysis according to the latest approved edition of "Test Methods for Evaluating Solid Waste (SW-846)", or other methods deemed satisfactory to EPA. If methods other than EPA methods are to be used, Respondent shall specify all such protocols in the applicable Work Plan. EPA may reject any data that does not meet the requirements of the approved Work Plan and EPA analytical methods and may require resampling and additional analysis.

69. Respondent shall ensure that all laboratories it uses for analyses participate in a quality assurance/quality control program equivalent to that which is followed by EPA. Respondent shall upon request by EPA, make arrangements for EPA to conduct a performance and quality assurance/quality control audit of the laboratories chosen by Respondent before, during, or after sample analyses. Upon request by EPA, Respondent shall have its laboratories perform analyses of samples provided by EPA to demonstrate laboratory performance. If the audit reveals deficiencies in a laboratory's performance or quality assurance/quality control, Respondent shall submit a plan to address the deficiencies and EPA may require resampling and additional analysis.

70. Respondent shall notify EPA, in writing, at least ten (10) days before engaging in any field activities, such as well drilling, installation of equipment, or sampling. If the time or date for the field activity changes after the required notification has been given to EPA, Respondent must notify EPA of the change as soon as Respondent becomes aware of the change, but in no event later than twenty-four (24) hours before the field activity is scheduled to occur. If Respondent believes it must commence emergency field activities without delay, Respondent may seek emergency telephone authorization from the EPA Project Manager or, if the EPA Project Manager is unavailable, her Unit Manager (Jamie Sikorski at (206) 553-5153) to commence such activities immediately. At the request of EPA, Respondent shall provide or allow EPA to take split samples or duplicate samples of all samples collected by Respondent pursuant to this Order. Similarly, at the request of Respondent, EPA shall allow Respondent or its authorized representatives to take split or duplicate samples of all

samples collected by EPA under this Order.

XI. PERIODIC REPORTING

71. Progress Reports: Respondent shall submit a written progress report to EPA concerning actions undertaken pursuant to this Order on the 15th of every month after the effective date of this Order until termination of this Order, unless otherwise directed by the EPA Project Manager. These reports shall describe all significant developments during the preceding period, including the actions performed and any problems encountered for all Work required by this Order, and the developments anticipated during the next reporting period including a schedule of actions to be performed, anticipated problems, and planned resolutions of past or anticipated problems. In addition, these reports shall include all information specified in this Order for inclusion in the periodic progress reports, including but not limited to the results of all sampling or tests and all other data generated by Respondent or its Contractors, or on Respondent's behalf received during the reporting period.

XII. EPA APPROVAL OF PLANS AND OTHER SUBMITTALS

72. After review of any plan, report, or other item which is required to be submitted for approval pursuant to this Order, EPA, shall: (a) approve the Submittal; (b) approve the Submittal upon specified conditions; (c) modify the Submittal to cure the deficiencies; (d) disapprove, in whole or in part, the Submittal, directing that the Respondent modify the Submittal; or (e) any combination of the above. EPA may also require approval for the periodic progress reports required by Section XI. (Periodic Reporting) and exercise the process set forth in this Section in the event that EPA determines that such action is necessary.

73. Upon receipt of approval, approval upon conditions, or modification by EPA, pursuant to Paragraph 72.(a), (b), or (c), Respondent shall proceed to take any action required by the plan, report, or other item, as approved or modified by EPA subject only to its right to invoke the Dispute Resolution procedures set forth in Section XVII (Dispute Resolution) with respect to the modifications or conditions made by EPA.

74. a. Upon receipt of a notice of disapproval pursuant to Paragraph 72.(d), for the Excess Stormwater Management and the Drinking Water Sampling and Alternate Water Supply Submittals,

Respondent shall, within fifteen (15) days or such longer time as specified by EPA in such notice, correct the deficiencies in accordance with EPA's comments and directions and resubmit the plan, report, or other item for approval. Upon receipt of a notice of disapproval pursuant to Paragraph 72.(d), for any other Submittal, Respondent shall, within thirty (30) days or such longer time as specified by EPA in such notice, correct the deficiencies in accordance with EPA's comments and directions and resubmit the plan, report, or other item for approval. Any stipulated penalties applicable to the Submittal, as provided in Section XVIII (Stipulated and Statutory Penalties), shall continue to accrue during the period of time that the Respondent is given to correct the deficiencies, except in the case of the initial submission of: 1) the Site Investigation Work Plan; 2) the comprehensive stand alone data document described in Paragraph C. of Attachment B; and, 3) the stand alone data document addendum described in Paragraph C. of Attachment B.

b. Notwithstanding the receipt of a notice of disapproval pursuant to Paragraph 72.(d), Respondent shall proceed, at the direction of EPA, to take any action required by any non-deficient portion of the Submittal. Implementation of any non-deficient portion of a Submittal shall not relieve Respondent of any liability for stipulated penalties under Section XVIII (Stipulated and Statutory Penalties).

75. In the event that a resubmitted plan, report, or other item, or portion thereof, is disapproved by EPA, EPA may again require the Respondent to correct the deficiencies, in accordance with the preceding Paragraphs. EPA also retains the right to modify or develop the plan, report, or other item. Respondent shall implement any such plan, report, or item as modified or developed by EPA, subject only to its right to invoke the procedures set forth in Section XVII (Dispute Resolution).

76. If upon resubmission, a plan, report, or item is disapproved or modified by EPA, Respondent shall be deemed to have failed to submit such plan, report, or item timely and adequately unless the Respondent invokes the dispute resolution procedures set forth in Section XVII (Dispute Resolution) and EPA's action is overturned pursuant to that Section. The provisions of Section XVII (Dispute Resolution) and Section XVIII (Stipulated and Statutory Penalties) shall govern the

implementation of the plan, report or item, and accrual and payment of any stipulated penalties during Dispute Resolution. If EPA's disapproval or modification is upheld, stipulated penalties shall accrue for such Violation from the date on which the Submittal was originally required, as provided in Section XVIII (Stipulated and Statutory Penalties).

77. All plans, reports, and other items required to be submitted to EPA under this Order shall, upon approval or modification by EPA, be enforceable under this Order. In the event EPA approves or modifies a portion of a plan, report, or other item required to be submitted to EPA under this Order, the approved or modified portion shall be enforceable under this Order.

XIII. ACCESS TO PROPERTY

78. Respondent shall provide access at reasonable times to the Facility and to all records and documentation in its possession or control, including those records and documents in the possession or control of Respondent's Contractors and employees, related to the conditions at the Site and the actions conducted pursuant to this Order for the sole purpose of the oversight, implementation, and enforcement of this Order. Respondent shall use its best efforts to gain access to areas owned or in the possession of someone other than Respondent, as necessary to implement this Order, as described in Paragraph 79. Such access shall be provided to EPA employees, contractors, agents, consultants, designers, representatives, and State of Washington representatives. These individuals shall be permitted to move freely at the Facility and appropriate off-site areas in order to conduct actions which EPA determines to be necessary. These individuals shall notify Respondent of their presence on the Facility by presenting their credentials, logging in and out at the plant office when entering or leaving the Facility, and shall allow Respondent's representative to accompany them. Respondent's representative will not impede the free movement of individuals on the Facility. Within fifteen (15) Business days of Respondent's execution of the Order. Respondent shall send to EPA a copy of its safety regulations for the Facility. EPA shall acknowledge in writing receipt of Respondent's safety regulations.

79. Where action under this Order is to be performed in areas owned by, or in possession of, someone other than Respondent, Respondent shall use its best efforts to obtain all necessary access

agreements within thirty (30) days of approval of any Work Plan for which access is required, or as otherwise specified, in writing, by the EPA Project Manager. Any such access agreement shall provide for access by EPA and its representatives to move freely in order to conduct actions which EPA determines to be necessary. Respondent shall provide EPA's Project Manager with copies of any access agreements. Respondent shall immediately notify EPA if after using its best efforts it is unable to obtain such agreements within the time required. Best efforts as used in this Paragraph shall include, at a minimum, a certified letter from Respondent to the present owners of such property requesting access agreements to permit Respondent, EPA, and its authorized representatives to access such property, and the payment of reasonable sums of money in consideration of granting access. In addition to immediately notifying EPA, Respondent shall, within ten (10) days of the its immediate notice, submit in writing, a description of its efforts to obtain access. EPA may, at its discretion, assist Respondent in obtaining access. In the event EPA obtains access, Respondent shall undertake EPA-approved Work on such property and Respondent shall reimburse EPA for all costs and attorney fees incurred by the United States in obtaining such access.

80. The Respondent agrees to indemnify the United States as provided in Section XXII (Indemnification) for any and all claims arising from activities on such property.

81. Nothing in this Section limits or otherwise affects EPA's right of access and entry pursuant to applicable law, including but not limited to RCRA and CERCLA.

82. Nothing in this Section shall be construed to limit or otherwise affect Respondent's liability and obligation to perform Corrective Measures including Corrective Measures beyond the Facility boundary, notwithstanding the lack of access, unless the lack of access is determined by EPA to be a Force Majeure in accordance with Section XIX (Force Majeure).

XIV. RECORD RETENTION, DOCUMENTATION AND AVAILABILITY OF INFORMATION

83. Respondent shall preserve all documents and information relating to Work performed under this Order, or relating to any Solid Waste or Hazardous Waste found at the Site, for six (6) years following completion of the actions required by this Order. At the end of this six (6) year

period and ninety (90) days before any document or information is destroyed, Respondent shall notify EPA that such documents and information are available to EPA for inspection, and upon request, shall provide the originals or copies of such documents and information to EPA. Such written notification shall reference the effective date, caption, and docket number of this Order and shall be addressed to the Director, Office of Waste and Chemicals Management, U.S. Environmental Protection Agency, Region 10. In addition, Respondent shall provide documents and information retained under this Section at any time before expiration of the six (6) year period at the written request of EPA.

84. Respondent further agrees that within thirty (30) days of retaining or employing any agent, consultant, or Contractor for the purpose of carrying out the terms of this Order, Respondent shall enter into an agreement with any such agent, consultant, or Contractor whereby such agent, consultant, or Contractor will be required to provide Respondent a copy of all documents produced pursuant to this Order.

85. All documents pertaining to this Order shall be stored by the Respondent in a centralized location at the Facility to facilitate access by EPA or its representatives.

86. Respondent may assert a business confidentiality claim pursuant to 40 C.F.R. § 2.203(b) with respect to part or all of any information submitted to EPA pursuant to this Order. Any assertion of confidentiality must be accompanied by information that satisfies the items listed in 40 C.F.R. § 2.204(e)(4) or such claim shall be deemed waived. Analytical and other data shall not be claimed as confidential by the Respondent. EPA shall disclose information covered by a business confidentiality claim only to the extent permitted by, and by means of, the procedures set forth at 40 C.F.R. Part 2, Subpart B. If no such claim accompanies the information when it is received by EPA, EPA may make it available to the public without further notice to Respondent. Respondent shall maintain a running log of privileged documents on a document-by-document basis, containing the date, authors, addressees, subject, the privilege or grounds claimed (e.g., attorney work product, attorney-client), and the factual basis for assertion of the privilege. Respondent shall keep the "privilege log" on file and available for inspection. EPA may at any time challenge claims of

privilege. Failure to maintain this log shall not constitute a waiver of privilege.

XV. NOTIFICATION AND DOCUMENT CERTIFICATION

87. Unless otherwise specified, all reports, correspondence, approvals, disapprovals, notices, or other Submittals relating to or required under this Order shall be in writing and shall be sent to the EPA's Project Manager as specified in Paragraph 49.d. above. Reports, correspondence, notices or other Submittals shall be delivered by hand, placed in overnight courier service, or sent by telefax with complete receipt verified by EPA's Project Manager or if she is not available, then her manager, Jamie Sikorski, and followed by a hard copy. Deadlines for Respondent's Submittals shall run from the date Respondent actually received the triggering notice from EPA.

88. With regard to submissions of plans, reports or other documents by a specified time, EPA must be in receipt of the document by the time specified in this Order for Respondent to be in compliance with this Order.

89. Any report or other document submitted by Respondent pursuant to this Order which makes any representation concerning Respondent's compliance or noncompliance with any requirement of this Order shall be certified by a responsible corporate officer of Respondent. A responsible corporate officer means: a president, secretary, treasurer, or vice-president of the limited partnership in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the limited partnership.

90. The certification required by Paragraph 89. above, shall be in the following form:

> "I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to evaluate the information submitted. I certify that the information contained in or accompanying this submittal is true, accurate, and complete. As to those identified portion(s) of this submittal for which I cannot personally verify the accuracy, I certify that this submittal and all attachments were prepared in accordance with procedures designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those directly responsible for gathering the information, or the immediate supervisor of such person(s), the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."
>
> Signature:_____
>
> Name: _____

Title: _____

Date: _____

XVI. COMPLIANCE WITH OTHER LAWS

91. Except as specified in Section VIII (Implementation of All Work Required), Respondent shall perform all actions required pursuant to this Order in accordance with all applicable local, state, and federal laws and regulations. Respondent shall obtain or cause its representatives to obtain all permits and approvals necessary under such laws and regulations.

XVII. DISPUTE RESOLUTION

92. Unless otherwise expressly provided for in this Order, the dispute resolution procedures of this Section shall be the exclusive mechanism for resolving disputes arising under this Order. However, the procedures set forth in this Section shall not apply to actions by EPA to enforce obligations of Respondent that have not been disputed in accordance with this Section. The Parties to this Order shall attempt to resolve, expeditiously and informally, any disagreements concerning this Order. If the Respondent objects to any EPA action taken pursuant to this Order, Respondent shall notify EPA, in writing, of its objections within ten (10) Business days of the date Respondent received notice of EPA's action to which it is objecting. Respondent's notification in writing of its objections shall be the only action that establishes that a dispute exists for purposes of this Section. Any dispute arising under this Order shall first be subject to informal negotiations between the Parties. The period for informal negotiations shall not exceed twenty (20) Business days from the date of written notification to EPA, unless extended by EPA. The dispute shall be considered to have arisen when EPA receives written notice of Respondent's objections.

93. In the event that the Parties cannot resolve a dispute by informal negotiations, then the position advanced by EPA shall be binding unless, within five (5) Business days after the conclusion of the informal negotiation period, Respondent invokes the formal dispute resolution procedures of this Section by serving on EPA a written Statement of Position on the matter in dispute, including, but not limited to, any factual data, analysis or opinion supporting that position and any supporting documentation relied upon by Respondent.

94. If Respondent fails to follow any of the requirements contained in this Section, then it shall have waived its right to avail itself of the dispute resolution provisions in this Order.

95. EPA may also serve on Respondent its Statement of Position, including, but not limited to, any factual data, analysis, or opinion supporting that position and any supporting documentation relied upon by EPA. An administrative record of the dispute will be maintained by EPA and will contain all statements of position, including supporting documentation, submitted pursuant to this Section.

96. If the Parties reach agreement on the dispute at any stage, the agreement shall be set forth in writing, and shall, upon signature of both Parties, be incorporated into and become an enforceable part of this Order.

97. The Parties will have twenty-eight (28) days after EPA's receipt of Respondent's Statement of Position, or such longer period of time as agreed to by both Parties, to reach an agreement. If no agreement is reached, EPA's Director of the Office of Waste and Chemicals Management will issue a written decision on the dispute at some time after the impasse. The decision of EPA shall be incorporated into and become an enforceable part of this Order and shall no longer be subject to dispute. Following resolution of the dispute, as provided by this Section, Respondent shall fulfill the requirement that was the subject of the dispute in accordance with the agreement reached or with EPA's decision, whichever occurs.

98. Except as provided in Section XVIII (Stipulated and Statutory Penalties), the existence of a dispute and EPA's consideration of matters placed in dispute shall not excuse, toll, or suspend any compliance obligation or deadline required pursuant to this Order during the pendency of the dispute resolution process except as agreed by EPA in writing.

XVIII. STIPULATED AND STATUTORY PENALTIES

99. Respondent shall be liable for stipulated penalties in the amounts set forth below any time Respondent fails to comply with any requirement of this Order, unless a Force Majeure has occurred as defined in Section XIX (Force Majeure) and EPA has approved the extension of a deadline as required by Section XIX (Force Majeure). Compliance by Respondent shall include completion of an

activity or any matter under this Order in a manner acceptable to EPA, and within the specified time schedules in and approved under this Order.

a. For failure to submit to EPA any Submittal (except the initial submission of: 1) the Site Investigation Work Plan required in Paragraph 52., 2) the comprehensive stand alone data document described in Paragraph C. of Attachment B; and, 3) the stand alone data document addendum described in Paragraph C. of Attachment B.; and any progress reports required in Section XI (Periodic Reporting)) required by this Order, including the Attachments:

i. $ 500 per day for the first through tenth days of noncompliance;

ii. $1,250 per day for the eleventh through twenty-first days of noncompliance;

iii. $2,500 per day for the twenty-second day and each succeeding day of noncompliance thereafter.

b. For failure to submit a progress report required in Section XI (Periodic Reporting), as required:

i. $250 per day for the first through tenth days of noncompliance;

ii. $500 per day for the eleventh through twenty-first days of noncompliance;

iii. $1,000 per day for the twenty-second day and each succeeding day of noncompliance thereafter.

c. For failure to commence, perform, and/or complete the Work specified in any Work Plan submitted pursuant to this Order, as required:

i. $1,000 per day for the first through tenth days of noncompliance;

ii. $1,750 per day for the eleventh through twenty-first days of noncompliance;

iii. $2,500 per day for the twenty-second day and each succeeding day of noncompliance thereafter.

d. For failure to comply with any other provision of this Order:

i. $ 500 per day for the first through tenth days of noncompliance;

ii. $1,250 per day for the eleventh through twenty-first days of noncompliance;

iii. $2,500 per day for the twenty-second day and each succeeding day of

noncompliance thereafter.

100. Penalties shall begin to accrue on the day after the complete performance is due or the day a Violation occurs, and shall continue to accrue through the final day of correction of the Violation or completion of the activity. Stipulated penalties shall not accrue, however, (1) with respect to a deficient Submittal of the initial Site Investigation Work Plan, the initial comprehensive stand alone data document and the initial stand alone data document addendum (the latter two are described in Paragraph C. of Attachment B); (2) with respect to a deficient Submittal under Section XII (EPA Approval of Plans and Other Submittals), during the period, if any, beginning on the thirty-first (31st) day after EPA's receipt of such Submittal until the date that EPA notifies Respondent of any deficiency; (3) with respect to a decision by the Director of the Office of Waste and Chemicals Management, under Paragraph 97. of Section XVII (Dispute Resolution), during the period, if any, beginning on the twenty-first (21st) day after the date that EPA receives Respondent's Statement of Position until the date that the Director issues a final decision regarding such dispute; (4) with respect to the Corrective Measures Implementation in the event that Respondent exercises its right to withdraw its consent to implement the selected Corrective Measures in accordance with Paragraphs 54.b. through 54.d.; or (5) with regard to disputed claims under the Trust Agreement as provided for in Paragraph 132.

101. Penalties shall continue to accrue as provided in Paragraph 100. during any dispute resolution period.

102. Nothing herein shall prevent the simultaneous accrual of separate stipulated penalties for separate Violations of this Order, even where those Violations concern the same event (e.g., submission of a Work Plan that is late and of unacceptable quality). Penalties shall continue to accrue regardless of whether EPA has notified the Respondent of a Violation.

103. All penalties owed to the United States under this Section shall be due and payable within thirty (30) days of the Respondent's receipt from EPA of a written demand for payment of the penalties, unless Respondent invokes the dispute resolution procedures under Section XVII (Dispute Resolution), in which case payment shall be made within thirty (30) days after the date of agreement

between the Parties or decision of EPA resolving the dispute. Such written demand, agreement or decision will describe the Violation and will indicate the amount of penalties due.

104. If payment is not made within thirty (30) days of the date of Respondent's receipt from EPA of a written demand for payment of the penalties or of the date of agreement or decision resolving the dispute, interest shall begin to accrue on any unpaid stipulated penalty balance beginning on the first day after Respondent's receipt of EPA's demand letter, or the date of the agreement or decision resolving the dispute, and will accrue until such penalties and interest have been paid in full. Interest shall accrue at the Current Value of Funds Rate established by the Secretary of the Treasury. Pursuant to 31 U.S.C. § 3717, and additional penalty of six percent (6 %) per annum on any unpaid principal shall be assessed for any stipulated penalty payment which is overdue for ninety (90) days or more.

105. All penalties shall be made payable by certified or cashier's check to the United States of America and shall be remitted to:

Mellon Bank Center
EPA, Region 10
3 Mellon Bank
P.O. Box 360903-M
Pittsburgh, Pennsylvania 15251

All such checks shall reference the name of the Facility, the Respondent's name and address, and the EPA docket number of this action. Copies of all such checks and letters forwarding the checks shall be sent simultaneously to the EPA Project Manager.

106. Respondent may dispute EPA's assessment of stipulated penalties by invoking the dispute resolution procedures under Section XVII (Dispute Resolution) unless the matter has already been in dispute resolution.

107. Neither the invocation of dispute resolution nor the payment of penalties shall alter in any way Respondent's obligation to comply with the terms and conditions of this Order.

108. The stipulated penalties set forth in this Section do not preclude EPA from pursuing any other remedies or sanctions which may be available to EPA by reason of Respondent's failure to comply with any of the terms and conditions of this Order.

109. No payments under this Section shall be deducted for federal tax purposes.

110. Notwithstanding any other provision of this Section, EPA may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this Order.

111. Violation of any provision of this Order may subject Respondent to civil penalties of up to seven thousand five hundred dollars ($ 7,500.00) per Violation per day, as provided in Section 7003(b) of RCRA, 42 U.S.C. § 6973(b), provided, however, that in the event that stipulated penalties are assessed for a Violation, then any amount of statutory penalties sought by EPA for that Violation will be reduced by the amount of the stipulated penalties already paid by Respondent for that Violation. Should Respondent violate this Order or any portion hereof, EPA may carry out the required actions unilaterally, pursuant to Section 104 of CERCLA, 42 U.S.C. § 9604, or other applicable authorities, and/or may seek judicial enforcement of this Order pursuant to Section 7003 of RCRA, 42 U.S.C. § 6973.

XIX. FORCE MAJEURE

112. Respondent agrees to perform all requirements under this Order within the time limits established under this Order, unless the performance is delayed by a Force Majeure. For purposes of this Order, a Force Majeure is defined as any event arising from causes beyond the control of Respondent, including but not limited to its Contractors, that delays or prevents performance of any obligation under this Order despite Respondent's best efforts to fulfill the obligation. Force Majeure does not include financial inability to complete the Work or increased cost of performance or any changes in Respondent's business or economic circumstances. Force Majeure may include the failure to obtain the necessary permits to conduct the Work within the time-frames required, but only if the such failure is beyond the control of the Respondent, including but not limited to its Contractors, and is despite Respondent's best efforts to fulfill the obligation. Force Majeure may also include the failure to obtain access, but only if such failure is beyond the control of the Respondent, including but not limited to its Contractors, and is despite Respondent's best efforts as described in Paragraph 79.

113. Respondent shall notify EPA orally within forty-eight (48) hours, and in writing within five (5) Business days after Respondent becomes or should have become aware of the event that

might cause a delay and which may constitute a Force Majeure. Such notice shall: identify the event causing the delay, or anticipated to cause delay, and the anticipated duration of the delay; provide Respondent's rationale for attributing such delay to a Force Majeure event; state the measures taken or to be taken to prevent or minimize the delay; and estimate the timetable for implementation of those measures. Respondent shall undertake best efforts to avoid and minimize the delay. Failure to comply with the notice provision of this action shall waive any claim of Force Majeure by the Respondent. Respondent shall be deemed to have notice of any circumstances of which its Contractors had or should have had notice.

114. If EPA determines that a delay in performance or anticipated delay of a requirement under this Order is or was attributable to a Force Majeure, the time period for performance of that requirement will be extended as deemed necessary by EPA. If EPA determines that the delay or anticipated delay has been or will be caused by a Force Majeure, EPA will notify Respondent, in writing, of the length of the extension, if any, for performance of such obligations affected by the Force Majeure. Any such extensions shall not alter Respondent's obligation to perform or complete other tasks required by the Order which are not directly affected by the Force Majeure.

115. If EPA disagrees with Respondent's assertion of a Force Majeure, EPA will provide notice of such disagreement in writing. If EPA provides such notice, Respondent may elect to invoke the dispute resolution provision, and shall follow the time frames set forth in Section XVII (Dispute Resolution). In any such proceeding, Respondent shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a Force Majeure, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that Respondent complied with the requirements of this Section. If Respondent satisfies this burden, the time for performance of such obligation will be extended by EPA for such time as is necessary to complete such obligation as determined by EPA.

XX. RESERVATION OF RIGHTS

116. Notwithstanding any other provisions of this Order, the United States retains all of its authority, including but not limited to information gathering and inspection authorities and rights, and the right to bring enforcement actions under RCRA, CERCLA, and any other applicable statutes or regulations.

117. Except as specifically provided in this Order, nothing herein shall limit the power and authority of EPA or the United States to take, direct, or order all actions necessary to protect public health, welfare, or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants, or contaminants, or Hazardous or Solid Waste on, at, or from the Site. Further, nothing herein shall prevent EPA from seeking legal or equitable relief to enforce the terms of this Order, from taking other legal or equitable action as it deems appropriate and necessary, or from requiring the Respondent in the future to perform additional activities pursuant to RCRA, CERCLA or any other applicable law.

118. EPA reserves all of its statutory and regulatory powers, authorities, rights, and remedies, both legal and equitable, which may pertain to Respondent's failure to comply with any of the requirements of this Order, including without limitation the assessment of penalties under Section 7003 of RCRA, 42 U.S.C. § 6973. This Order shall not be construed as a covenant not to sue, release, waiver, or limitation of any rights, remedies, powers, and/or authorities, civil or criminal, which EPA has under RCRA, CERCLA, or any other statutory, regulatory, or common law authority of the United States.

121. EPA reserves the right to perform any portion of the Work consented to herein or any additional Site characterization, feasibility study, and remedial work as it deems necessary to protect human health and/or the environment. EPA may exercise its authority under CERCLA to undertake response actions at any time; if it does, EPA will attempt to provide Respondent notice before performing such actions. In any event, EPA reserves its right to seek reimbursement from Respondent for costs incurred by the United States. Notwithstanding compliance with the terms of this Order, Respondent is not released from liability, if any, for the costs of any response actions taken

or authorized by EPA.

122. If EPA determines that activities in compliance or noncompliance with this Order have caused or may cause a release of Hazardous Waste or Hazardous Constituents, or a threat to human health and/or the environment, or that Respondent is not capable of undertaking any of the Work ordered, EPA may order Respondent to stop further implementation of this Order for such period of time as EPA determines may be needed to abate any such release or threat and/or to undertake any action which EPA determines is necessary to abate such release or threat.

123. This Order is not intended to be nor shall it be construed to be a permit. The Parties acknowledge and agree that EPA's approval of any Work Plan does not constitute a warranty or representation that the Work Plans will achieve the required cleanup or performance standards. Compliance by Respondent with the terms of this Order shall not relieve Respondent of its obligations to comply with RCRA or any other applicable local, State, or federal laws and regulations, except as provided in Paragraph 55.

124. By signing this Order and taking actions under this Order, the Respondent does not necessarily agree with EPA's Findings of Fact and Conclusions of Law. Furthermore, the participation of Respondent in this Order shall not be considered an admission of liability and is not admissible in evidence against Respondent in any judicial or administrative proceeding other than a proceeding by the United States, including EPA, to enforce this Order or a judgment relating to it. However, Respondent agrees not to contest the validity or terms of this Order, or the procedures underlying or relating to it in any action brought by the United States, including EPA, to enforce its terms.

125. Notwithstanding any other provision of this Order, no action or decision by EPA pursuant to this Order, including without limitation, decisions of the Regional Administrator, the Director of the Waste & Chemicals Management Office, or any authorized representative of EPA, shall constitute final agency action giving rise to any right of judicial review prior to EPA's initiation of a judicial action to enforce this Order, including an action for penalties or an action to compel Respondent's compliance with the terms and conditions of this Order.

126. In any subsequent administrative or judicial proceeding initiated by the United States for injunctive or other appropriate relief relating to the Facility, Respondent shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim-splitting, or other defenses based upon any contention that the claims raised by the United States in the subsequent proceeding were or should have been raised in the present matter.

XXI. OTHER CLAIMS

127. By issuance of this Order, the United States and EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondent. The United States or EPA shall not be deemed a party to any contract entered into by the Respondent or its directors, officers, employees, agents, successors, representatives, assigns, Contractors, or consultants in carrying out actions pursuant to this Order.

128. Nothing in this Order constitutes a satisfaction or release from any claim or cause of action against the Respondent or any person not a party to this Order, for any liability such person may have under RCRA, CERCLA, other statutes, or the common law, including, but not limited to, any claims of the United States for costs, damages, and interest under Sections 106(a) and 107(a) of CERCLA, 42 U.S.C. §§ 9606(a) and 9607(a).

129. This Order does not constitute a preauthorization of funds under Section 111(a)(2) of CERCLA, 42 U.S.C. § 9611(a)(2). The Respondent(s) waive(s) any claim to payment under Sections 106(b), 111, and 112 of CERCLA, 42 U.S.C. §§ 9606(b), 9611, and 9612, against the United States or the Hazardous Substance Superfund arising out of any action performed under this Order.

XXII. INDEMNIFICATION

130. Respondent agrees to indemnify, save and hold harmless the United States, its officials, agents, Contractors, employees, and representatives from any and all claims or causes of action: (a) arising from, or on account of, acts or omissions of Respondent, Respondent's officers, heirs, directors, employees, agents, Contractors, receivers, trustees, successors or assigns, in carrying out actions pursuant to this Order; and (b) for damages or reimbursement arising from or on account of

any contract, agreement, or arrangement between (any one or more of) Respondent, and any persons for performance of work on or relating to the Site, including claims on account of construction delays. In addition, Respondent agrees to pay the United States all costs incurred by the United States, including litigation costs arising from or on account of claims made against the United States based on any of the acts or omissions referred to in the preceding sentence.

XXIII. INSURANCE

131. At least seven (7) days prior to commencing any on-Site Work under this Order, the Respondent shall secure, and shall maintain for the duration of this Order, comprehensive general liability insurance and automobile insurance with limits of $ 3 million dollars, combined single limit. Within the same time period, the Respondent shall provide EPA with certificates of such insurance and a copy of each insurance policy. If the Respondent demonstrates by evidence satisfactory to EPA that its Contractor maintains insurance equivalent to that described above, or insurance covering some or all of the same risks but in an equal or lesser amount, then the Respondent need provide only that portion of the insurance described above which is not maintained by such Contractor.

XXIV. FINANCIAL ASSURANCE

132. Within thirty (30) days after the effective date of this Order, Respondent shall establish the financial assurance for the Drinking Water Sampling and Alternate Water Supply Plan, the Site Investigation, and the Corrective Measures Study in the form of the Trust Agreement attached to this Order as Attachment I. The initial deposit to the Trust Fund shall be five-hundred thousand dollars ($500,000). Respondent shall make two additional payments into the Trust Fund within twelve and eighteen months, respectively, of the effective date of this Order of two-hundred and fifty thousand dollars ($250,000) each.

133. Funds shall be withdrawn from the Trust to pay for Work required under this Order in accordance with the payment provisions in the Trust Agreement.

134. Within sixty (60) days of receiving approval of the final CMS Report, Respondent shall submit to EPA for review and approval a written cost estimate and proposed plan for financial assurance for the Corrective Measures Implementation Plan.

135. The cost estimate for the selected Corrective Measures must include the costs to Respondent of hiring an independent third party to satisfactorily perform all activities the costs of which are required to be included in the respective cost estimate. An independent third party is a party who is neither a parent nor a subsidiary of Respondent.

136. The previous financial assurance mechanism will remain in place until Respondent has established a new instrument in accordance with EPA's approval or until Respondent has withdrawn its consent to implement said Corrective Measures in accordance with Paragraph 54.b. at which time the instrument will terminate in accordance with the terms of the instrument.

137. Each financial instrument obtained pursuant to this Section must be established and used solely for the purpose of conducting the activities required by this Order at and for this Facility. Each financial instrument obtained pursuant to this Section must be consistent with 40 C.F.R. § 265.145 to the extent determined appropriate by EPA. Each financial assurance instrument established and maintained by Respondent in accordance with this Section must allow the funds provided in the financial assurance to be available in the event that Respondent proves unable or unwilling to undertake any actions prescribed in this Order while it is in effect so that the activities covered by the instrument may be completed by Respondent or EPA as determined by EPA.

138. A copy of each notices, claim certificates or any other document related to the financial assurance required by this Section shall be delivered to:

Kim Ogle
Project Manager
Mail Stop WCM-126
U.S. Environmental Protection Agency, Region 10
1200 Sixth Avenue
Seattle, Washington 98101

Jennifer G. MacDonald
Assistant Regional Counsel
Mail Stop ORC-158
U.S. Environmental Protection Agency, Region 10
1200 Sixth Avenue
Seattle, Washington 98101

Regional Administrator
Mail Stop
U.S. Environmental Protection Agency, Region 10
1200 Sixth Avenue
Seattle, Washington 98101

XXV. MODIFICATION

139. This Order may only be modified by mutual agreement of EPA and Respondent. Any agreed modifications shall be in writing, be signed by both Parties, shall have as their effective date the date on which they are signed by EPA, and shall be incorporated into this Order.

140. Any requests for a compliance date modification or revision of an approved Work Plan requirement must be made in writing. Such requests must be timely and provide justification for any proposed compliance date modification or Work Plan revision. EPA has no obligation to approve such requests, but if it does so, such approval must be in writing. Any approved compliance date or Work Plan modification shall be incorporated by reference into this Order.

141. No informal advice, guidance, suggestion, or comment by EPA regarding reports, plans, specifications, schedules, or any other writing submitted by the Respondent shall relieve the Respondent of its obligation to obtain such formal approval as may be required by this Order, and to comply with all requirements of this Order unless it is formally modified.

XXVI. ADDITIONAL ACTION

142. EPA may determine or Respondent may propose that certain tasks, including investigatory work, engineering evaluation, or procedure/methodology modifications, are necessary in addition to or in lieu of the tasks included in any EPA-approved Work Plan when such additional work is necessary to meet the purposes set forth in Section IV (Statement of Purpose). EPA may determine that Respondent shall perform the additional work and EPA will specify, in writing, the basis for its determination that the additional work is necessary. Within five (5) days after the receipt of such determination, Respondent shall have the opportunity to meet or confer with EPA to discuss the additional work. If required by EPA, Respondent shall submit for EPA approval a Work Plan for the additional work. Such Work Plan shall be submitted within thirty (30) days of receipt of EPA's determination that additional work is necessary, or according to an alternative schedule established by

EPA. Upon approval of a Work Plan, Respondent shall implement it in accordance with the schedule and provisions contained therein.

XXVII. TERMINATION AND SATISFACTION

143. The provisions of this Order shall be deemed satisfied by Respondent on written notice from EPA that Respondent has demonstrated that all of the terms of this Order including any additional work as may be performed pursuant to Section XXVI (Additional Work) of this Order, have been completed to the satisfaction of EPA. Termination of this Order shall not, however, terminate Respondent's obligation to comply with Sections XIV (Record Retention, Documentation and Availability of Information), XX (Reservation of Rights), and XXII (Indemnification) of this Order.

XXVIII. PUBLIC COMMENT ON THIS ORDER

144. Final acceptance by EPA of this Order shall be subject to Section 7003(d) of RCRA, 42 U.S.C. § 6973(d), which requires EPA to provide notice, opportunity for a public meeting and a reasonable opportunity to comment on the proposed settlement prior to its final entry. After consideration of any comments submitted during a public comment period of not less than fifteen (15) days (may be extended by EPA) held pursuant to Section 7003(d) of RCRA, EPA may withhold consent to all or part of this Order if comments received disclose facts or considerations which indicate that this Order is inappropriate, improper, or inadequate. Otherwise, this Order shall become effective when EPA signs the Order.

XXIX. SEVERABILITY

145. If a court issues an order that invalidates any provision of this Order or finds that Respondent has sufficient cause not to comply with one or more provisions of this Order, Respondent shall remain bound to comply with all provisions of this Order not invalidated or determined to be subject to a sufficient cause defense by the court's order.

XXX. EFFECTIVE DATE

146. This Order shall be effective when EPA signs the Order after the public comment period as specified in Section XXVIII (Public Comment on This Order) above. Within two (2) Business

days of signing the Order, EPA will provide Respondent with a copy of the signature page of the Order signed by the Director of the Office of Waste & Chemicals Management by telefax.

The undersigned representative of Respondent certifies that it is fully authorized to enter into the terms and conditions of this Order and to bind the party it represents to this document.

Agreed this 9th day of April, 2001.

By: _____
Signature

Georgia Baxter
Print Name

Executive Vice President
Title

J.H. Baxter & Co.
Company

It is so ORDERED and Agreed this 30 day of April, 2001.

By: _____ Date: 4/30/01

Richard Albright
Director, Office of Waste & Chemicals Management
Region 10, U.S. Environmental Protection Agency

EFFECTIVE DATE: April 30, 2001

JH Baxter, Arlington
7003 Order Attachments Figures + Tables

AK3019
4/30/01
5e

ATTACHMENT A

OBJECTIVES AND GENERAL REQUIREMENTS OF THE SITE INVESTIGATION
ADMINISTRATIVE ORDER ON CONSENT
U.S. EPA DOCKET NO.

Objective of the Site Investigation Work Plan

The objective of the Site Investigation is to characterize the environmental conditions of the Site and to determine the full nature and extent of contamination in all media to ultimately aid in the selection and design of a final remedy. In meeting this objective, a Site Conceptual Model is necessary.

The Site Investigation Work Plan shall meet the following requirements, in addition to the specific requirements and deadlines set forth in the Order:

I. The RCRA Facility Investigation ("RFI") Guidance in Volume I Section 2 of EPA Document Number EPA 530/SW-89-031, "RCRA Facility Investigation (RFI) Guidance," (May, 1989) shall be followed when developing the Site Investigation Work Plan. See Chapter III of OSWER Directive 9902.3-2A, "RCRA Corrective Action Plan" (May, 1994) (Attachment F) for additional guidance.

II. The Site Investigation Work Plan shall include a Project Management Plan which will include schedules and a description of the technical approach.

III. The Site Investigation Work Plan shall include a Site Conceptual Model in accordance with the guidance in Attachment G.

IV. The Site Investigation Work Plan shall include a Data Collection Quality Assurance Plan and a Data Management Plan, developed as per the requirements set forth in Attachment C of the Order.

V. The Site Investigation Work Plan shall include a Sampling and Analysis Plan. This plan shall address the sampling techniques, analytical parameters, and analytical methods to be used for characterization of all media. Rationale shall be provided to support the selection of each technique, parameter and method.

VI. The Site Investigation Work Plan shall include a Public Involvement Plan, to be developed in consultation with EPA, for the dissemination of information to the public regarding the investigation activities and results. The Public Involvement Plan shall specify the repository for all submittals and reports required by this Order. The Public Involvement Plan shall also specify the methodology for identifying interested members of the public that will be notified of the placement of any information in the repository. Interested members of the public shall include, but not be limited to, the owners and operators of adjacent properties.

VII. The Site Investigation Work Plan shall include provisions for carrying out investigations necessary to characterize geology, stratigraphy and hydrogeology beneath the Site, define the sources, nature and extent of contamination in all media, and identify actual or potential receptors. The investigations must result in data of adequate technical quality to support the development and evaluation of corrective measures in a Corrective Measures Study (CMS) and must assure that the full extent of each hazardous waste and/or hazardous constituent released at or from the Site has been identified in each media to EPA's satisfaction. Detailed work plans and technical specifications for specific investigative activities, such as treatability studies, within the Site investigation may be submitted and implemented in a phased manner, and may utilize information obtained during prior phases of the investigation. The Site Investigation Work Plan shall include provisions for characterizing the Site as set forth in Attachment B.

ATTACHMENT B

SCOPE OF WORK FOR SITE INVESTIGATION WORK PLAN
ADMINISTRATIVE ORDER ON CONSENT
U.S. EPA DOCKET NO.

Components of the Site Investigation Work Plan

A. Environmental Setting

The Site Investigation Work Plan shall include provisions to collect information to supplement and verify existing information on the environmental setting at the Site. Such characterization shall extend, at a minimum, as necessary to confirm that the full extent of each hazardous waste and/or hazardous constituent released at or from the Facility has been identified in order to ensure protection of human health and the environment. The Site Investigation Work Plan shall provide for characterization of the following:

1. Hydrogeology

The following shall be provided:

a. A description of regional and site-specific geologic and hydrogeologic characteristics affecting groundwater flow and contaminant migration beneath the Facility. This description shall include, but not be limited to:

(1) Regional and site-specific stratigraphy. At a minimum, this shall include a detailed lithologic description of the Site from the surface to the base of the lower confining units or within the zone of contamination as specified by EPA. All soil borings shall be logged continuously or at specific intervals approved by EPA. Lithologic descriptions shall include, but not be limited to, items such as grain size and sorting, depositional environment, and description according to the Unified Soil Classification System.

(2) An identification of areas of groundwater recharge and discharge, their location and characteristics.

(3) An evaluation of the continuity of stratigraphic units within the Site.

b. A description of each hydrogeologic unit which may serve as a contaminant migration pathway at or from the Facility. This description shall be based upon, at a minimum, field studies, soil and aquifer tests, and soil borings and samples. The description shall identify all distinct water bearing zones and/or systems and any intervening saturated or unsaturated units at the Site. The description shall include, but not be limited to, the following information:

(1) Hydrogeologic cross sections indicating the location and extent of each hydrogeologic unit;

(2) An identification of each geologic formation, group of formations, or part of a formation in all water bearing zones capable of yielding a significant amount of groundwater to wells or springs. This shall include all water bearing zones that

may serve as a pathway for contaminant migration, including perched saturated zones;

(3) Estimates of hydraulic conductivity and total porosity for each hydrogeologic unit as necessary to characterize the impact of each such unit on groundwater flow and potential contaminant transport;

(4) An identification of zones of contrasting hydraulic conductivity that may affect the migration of contaminants as necessary to characterize groundwater flow and potential contaminant transport;

c. A description of the regional and site-specific hydrogeologic flow regime for each hydrogeologic unit identified pursuant to A.1.b of this Attachment. At a minimum, the groundwater hydrogeologic flow description shall include the following:

(1) Water level contour and/or potentiometric surface maps using measurements from existing and newly installed wells. These maps shall meet the following requirements:

i) Contour maps shall incorporate representative data obtained from water level or fluid pressure measurements from all groundwater monitoring wells used to fulfill the requirements of this Order.

ii) Contour maps shall be prepared for the each water bearing zone identified.

iii) In the event that pressure transducers are used, contour maps shall reflect the influence of barometric pressure, if any, on water level measurements. Barometric pressure shall be recorded at the beginning and end of every period during which groundwater levels are measured to fulfill the requirements of this Order.

iv) Contour maps shall reflect the presence and influence of any non-aqueous phase liquids. Any measurements necessary to correct water levels for the presence of these liquids shall be taken at the time of water level measurements. Interphase probes must be utilized in measuring non-aqueous phase liquids.

(2) Hydrogeologic cross sections showing the magnitude of vertical gradients constructed at scales approved by EPA;

(3) Other graphical representations of the magnitude and influence of vertical and horizontal gradients on the contaminant transport at the Site.

(4) The flow system, including the vertical and horizontal components of flow, as described through flow vectors or the construction of flow nets, as necessary to identify and characterize potential contaminant transport pathways;

(5) Any changes in the hydraulic flow regime due to seasonal influences;

(6) An identification and interpretation of any hydraulic interconnections within and

between saturated zones at the Site and all downgradient areas potentially impacted by releases at or from the Facility, including quantification of recharge to these aquifers;

(7) Hydrographs depicting the variation of water levels in each well over the period of water level measurements.

(8) An evaluation and investigation of groundwater mounding at the Site which may affect contaminant transport pathways.

(9) An identification of the location and estimation of the amount of groundwater recharge and discharge.

d. A description of human influences, including off-site structures and conditions, that may affect the hydrogeology of and migration of any contaminants at or from the Facility, identifying:

(1) Active and inactive local water withdrawal wells with the potential to affect groundwater flow at the Site, and approximate pumping schedules; and,

(2) Structures including, but not limited to, gas and electric utilities, pipelines, french drains, ditches, unlined ponds, septic tanks, NPDES outfalls, sewer pipes, stormwater drains, and retention areas etc.

e. A description of regional and site surface water flow regimes based on present and historical conditions since operations began on the Facility. At a minimum, this description must include:

(1) Description and map of surface water channels(named or unnamed) to Portage and Quilceda Creeks as identified in published reports by the United States Geologic Survey (USGS) and Snohomish County,

(2) Recharge areas to groundwater

2. Soils

The Site Investigation Work Plan shall include characterization of the soil in the vicinity of known and suspected contaminant releases. Such characterization shall include all factors necessary and appropriate to define the potential for contaminant migration and to evaluate contaminant fate and transport in the soil system. Unless otherwise specified by EPA, examples of the descriptions and measurements which must be included in the characterization of the soil, include, but are not limited to, the following:

a. Soil descriptions in accordance with the Unified Soil Classification system;
b. Surface soil distribution;
c. Hydraulic conductivity (saturated);
d. Bulk density;
e. Porosity;
f. Cation exchange capacity (CEC);
g. Soil organic matter content;
h. Soil pH;

i. Particle size distribution based on sieve analyses;
j. Moisture content;
k. Presence of stratification or soil structures that may affect unsaturated flow;
l. Infiltration;
m. Evapotranspiration;
n. Storage capacity;
o. Mineral content;
p. Contaminant attenuation or absorption capacity and mechanisms;
q. Color photographs of all samples intervals, with a size scale present in each photograph.

All soil borings conducted under the Site Investigation Work Plan shall be logged continuously, or at specific intervals approved by EPA. Respondent shall conduct sufficient soil borings to provide for a detailed lithologic description from the ground surface to, at a minimum, into the confining unit, as determined by EPA. The Site Investigation Work Plan shall include provisions to extend this characterization as necessary to determine the full extent of soil contamination. Soil characterization shall occur for each distinct soil type in all soil borings. All soil borings shall be abandoned using bentonite or bentonite grout, unless such boring is completed as a groundwater monitoring well under this Order.

B. Contamination Characterization

The Site Investigation Work Plan shall include requirements to collect analytical data on groundwater, soils, air, surface water, and sediment contamination at and from the Facility and other areas affected by Facility operations. This data shall be sufficient to define the origin, nature and extent, and direction and rate of contaminant migration. Data shall include time and location of sampling, environmental conditions during sampling, media sampled, contaminant concentrations, and the identity of the individuals performing the sampling and analysis. Analytical methods must be those specified in Test Methods For Evaluating Solid Waste-Physical/Chemical Methods, U.S. EPA Publication No. SW-846, Final Update III, promulgated on June 13, 1997, (See 62 FR 32452), Methods for Chemical Analysis of Water and Wastes, EPA Report 600/4-79-020, March 1983, or alternate methods approved by EPA and which Respondent has demonstrated will perform equal to or better than SW-846 methods under conditions expected in the investigation.

Respondent shall address the following types of contamination at or from the Facility:

1. Groundwater Contamination:

a. The Site Investigation Work Plan shall include requirements to characterize any groundwater contamination at or from the Facility. This investigation shall, at a minimum, provide the following information:

(i) A description of the horizontal and vertical extent of any immiscible or dissolved contaminants originating from the Site, including concentration profiles of all parameters identified in B.1.d.(1) of this Attachment and any potential degradation products of those parameters;

(ii) The rate of contaminant migration;

(iii) An evaluation of factors influencing the migration of contaminants; and,

(iv) A prediction of future contaminant migration, and a justification of any

assumptions, calculations or models used to develop the prediction.

The Site Investigation Work Plan shall document the procedures to be used in making the above determinations (e.g., well design, well construction, the use of Push Probe technology to aid in the placement of wells, iterative sampling concepts, geophysical investigative methods, groundwater modeling, etc.).

b. The Site Investigation Work Plan shall include provisions for installation of all groundwater monitoring wells needed to delineate the nature and extent of any contamination at or from the Facility. These requirements shall define the criteria for placement of wells, and the design and installation procedures to be used. The Site Investigation Work Plan shall include provisions to extend the groundwater monitoring well system as necessary both horizontally and vertically to determine the full extent of groundwater contamination. The proposed groundwater monitoring system and monitoring well network shall meet the following requirements:

(1) The network shall contain upgradient wells capable of yielding samples representative of background water quality in each hydrogeologic unit identified pursuant to A.1.b of this Attachment and that are not affected by releases of hazardous waste and/or hazardous constituents from the Facility. The number and location of the wells must be sufficient to characterize the spatial variability of background water quality.

(2) The network shall contain downgradient wells capable of detecting any release to groundwater in each hydrogeologic unit identified pursuant to A.1.b of this Attachment of hazardous waste and/or hazardous constituents from the Facility. The number and location of these wells must be sufficient to characterize the nature and extent of any such releases, including any such releases which have migrated off-site.

(3) The network shall be capable of operating for a period of time sufficient to provide representative groundwater samples during the investigation and the evaluation and implementation of any corrective measures required at the Site.

(4) Any existing wells at the Site included in the monitoring network that cannot meet the requirements of B.1.b.(1), (2) and (3) above, shall be decommissioned and supplemented by new monitoring wells if determined by EPA to be necessary.

(5) The Site Investigation Work Plan shall include provisions to evaluate results of sampling and analysis throughout the investigation, and to modify the groundwater monitoring network and the Sampling and Analysis and Data Management Plan (Attachment C) as necessary, based on this evaluation, to meet the objectives of the investigation.

Respondents shall follow the applicable guidelines and specifications in RCRA Ground-Water Monitoring: Draft Technical Guidance (EPA/530-R-93-001, November, 1992), and the Technical Enforcement Guidance Document (EPA OSWER 9950.1, September 1986)(TEGD) and other available technical guidance approved for use by EPA.

c. The Site Investigation Work Plan shall include provisions to provide the following

information for all groundwater monitoring wells used to meet the investigation objectives in Attachment A:

(1) A description and map showing all well locations, including each well's surveyed surface reference point and vertical reference point elevation. Wells shall be surveyed using, or existing well elevations converted to, the National Geodetic Vertical Datum (NGVD), 1929, or updated to North American Vertical Datum of 1988 (NAVD88) to an accuracy of within 0.01. Horizontal surveying accuracy shall be within 1.0 foot and must include the Washington State Coordinate System of each location. The table which provides this data must reference the datum used for all measurements. Additional Regional guidance on constructing maps will be provided by EPA;

(2) The boring and casing diameter and depth of each well;

(3) Specification of well intake design, including screen slot type, size and length, depth of screen, filter pack materials, and method of filter pack emplacement;

(4) Specification of the well casing and screen materials. Well construction materials shall be chosen based on parameters to be monitored, and the nature of contaminants that could potentially exist and migrate at or from the Facility. Well materials shall: (1) minimize the potential of adsorption of constituents from the samples, and (2) not be a source of sample contamination. Wells shall be constructed for the purpose of long term monitoring in accordance with all applicable federal, state, and local laws;

(5) Documentation of methods used to seal the well from the surface to prevent infiltration of water into the well and downward migration of contaminants through the well annulus;

(6) Description of well development methods and procedures;

(7) Documentation of all well design and installation parameters specified in Section 3.5 of the TEGD; and,

(8) Documentation that all boring, well installation, and well abandonment procedures comply with all applicable federal, state, and local laws, and were conducted by a licensed driller.

d. The Site Investigation Work Plan's Sampling and Analysis and Data Management Plan (Attachement B) shall include the following elements specific to the groundwater monitoring network as necessary to meet the objectives of Attachment A.

(1) Parameters for chemical analysis of groundwater samples. For the initial round of sampling, selected samples (including source areas and other less contaminated downgradient wells) shall be analyzed for all constituents specified in Appendix IX of 40 C.F.R. Part 264. The remainder of the samples in the initial round shall be analyzed for those constituents that might be present in the composition of wastes that are or have been managed at the Facility. Parameters for subsequent sampling events shall be selected, subject to EPA review and approval, based on the results of initial groundwater sampling and analysis, and

upon the composition of wastes that are or have been managed at the Facility. The rationale for selection of all parameters shall be provided.

(2) A sampling schedule for groundwater monitoring. At a minimum, this schedule shall include collection of groundwater samples for chemical analysis from selected wells, as specified in the EPA-approved Sampling and Analysis and Data Management Plan on a quarterly basis to characterize temporal trends and variations in groundwater contaminant concentration. The EPA-approved Sampling and Analysis and Data Management Plan shall specify wells to be sampled, sampling frequency, and a rationale for sampling.

(3) Provisions for sampling and reporting of the occurrence, amount, thickness, and composition of any non-aqueous phase liquids encountered in any monitoring wells.

2. Soil Contamination:

a. The Site Investigation Work Plan shall include requirements to characterize the contamination of the soil at the Facility and from the Facility and any contaminant releases. The Site Investigation Work Plan shall include provisions to extend this characterization as necessary both vertically and horizontally to determine the full extent of soil contamination. Soil sampling shall occur at the following locations, and where necessary to meet the investigation objectives:

(1) From all soil borings, from the surface as necessary to determine the full extent of contamination, at a maximum of 2.5 foot intervals, or at other intervals specified by EPA. Where EPA determines that contamination has impacted the aquifer and/or the lower confining units, or existing data or field observations so indicate, soil borings and sampling shall be extended vertically as necessary to determine the full extent of contamination;

(2) At all stratigraphic unit contacts;

(3) At the location of any preferred routes of contaminant migration;

(4) Where field observation or testing indicate greater concentration of contaminants relative to the nearest strata that would otherwise be sampled.

b. The Site Investigation Work Plan Sampling and Analysis Plan shall document the following for soil sampling:

(1) The sampling techniques and equipment to be used;

(2) The parameters for chemical analysis. Selected samples shall be analyzed for constituents specified in Appendix VIII of 40 C.F.R. Part 261, with a potential to be present based on the composition of wastes that are of have been managed at the Facility. Parameters for subsequent sampling events shall be selected, subject to EPA review and approval, based on the results of initial sampling and analysis, and upon the composition of wastes that are or have been managed at the Site. The rationale for selection of all parameters shall be provided.

c. The Site Investigation Work Plan shall provide for documentation of the following information, including any associated calculations, derivations or assumptions:

(1) A description of the vertical and horizontal extent of contamination for all 40 C.F.R. Part 261, Appendix VIII contaminants detected in soil at the Site.

(2) A description of contaminant properties and contaminant/soil interactions within the contaminant source area and plume. Examples of properties and interactions which may be required include contaminant solubility, speciation, adsorption, leachability, retardation coefficients, biodegradability, hydrolysis, photolysis, oxidation, soil cation exchange capacity, and other factors that might affect contaminant migration and transformation. This information shall be presented in sufficient detail to fulfill the objectives of the investigation.

(3) Concentrations of each contaminant in all soil samples.

(4) The rate and direction of contaminant migration and a prediction of future contaminant migration rate, including consideration of releases of contamination from soils to groundwater.

3. Air Releases:

The Site Investigation Work Plan shall include requirements for characterizing or controlling air releases of hazardous constituents at or from the Facility.

a. For each air release at the Site, the Site Investigation Work Plan shall include a description of the unit and/or process, and control devices if present. The description should clearly identify whether the unit and/or process is subject to regulation by the Puget Sound Air Pollution Control Authority and/or 40 C.F.R. Part 264 Subparts AA and/or BB, and must describe the emission limits under those programs. The Site Investigation Work Plan shall include specific provisions to determine the following:

(1) The composition and concentration of hazardous constituents present in the air over the units and at any additional locations identified in the Site Investigation Work Plan;

(2) The estimated rates of release of hazardous constituents from the units and the bases for determining the estimates, such as observed concentrations of constituents at the units, physical and chemical characteristics of waste constituents, meteorological data, and any theoretical assumptions, analytical techniques or models used to arrive at the estimates; and,

(3) The predicted exposures and risks of harmful effects to receptors of air emissions of hazardous constituents from the specified units. All calculations, algorithms, existing and new information, and all assumptions used to estimate the effects of air emissions, shall be documented in the findings.

b. If direct measurements of air releases from the Facility are to be used to fulfill the requirements of this Order, then the Site Investigation Work Plan's Sampling and Analysis and Data Management Plan shall document the following elements specific to characterization of releases to air at or from the Facility:

(1) The type, number and location of air sampling stations proposed for the investigation;

(2) The sampling methods and frequency of sampling to be used; and,

(3) The parameters for analysis and analytical methods to be used. Air samples shall be analyzed for all major volatile organics in wastes accepted at the Site.

4. Surface Water Contamination:

The Site Investigation Work Plan shall include requirements to determine the nature and extent of surface water and sediment contamination due to discharges of contaminated groundwater at or from the Facility. The Work Plan shall specify the methods and procedures to be used to characterize the following:

a. Site surface and groundwater flow paths and an evaluation of the potential for surface and groundwater flows to discharge to existing surface water drainage. This evaluation shall consider current and historical conditions and operations, proximity of the site to off-site surface water, proximity and elevation of groundwater to off-site surface water, the proximity of potential surface and groundwater receptors to the site groundwater contamination and other appropriate information. The Work Plan shall identify areas that have a potential to be groundwater or surface water discharge points to surface water and shall include a rationale for selection of areas of potential concern.

b. The contribution of contaminated groundwater discharges and contaminated stormwater and/or run-off to surface water at and downgradient from the Facility, including discharges of contaminated groundwater to surface drainage ways and surface waters, and discharges of groundwater to subsurface drainage facilities for stormwater management at or from the Facility.

c. The nature and extent of surface water and sediment contamination due to contributions of hazardous waste and/or hazardous constituents from the Site, including those sources identified above.

d. The Site Investigation Work Plan shall include specifications for the following aspects of the surface water contamination investigation:

(1) The methods and equipment used to collect surface water and sediment samples for analysis.

(2) The locations for surface water and sediment sampling, and the rationale for their selection (e.g., groundwater discharge areas identified through flow net construction performed for the hydrogeologic characterization of the Site and potentially affected downgradient areas). At a minimum, sediment samples shall be taken at any on-site or off-site discharges, outfalls, outlets, catch basins or manholes associated with surface water flow from the Facility.

(3) Surface water and sediment samples from the initial round of sampling collected pursuant to this Order shall be analyzed for metals, total petroleum hydrocarbons, total solids, and those Appendix IX volatile and semivolatile organic compounds which are or have been present at the Site. Parameters for

subsequent sampling events, if determined to be necessary by EPA, shall be selected, subject to EPA review and approval, based on the results of initial surface water and sediment sampling and analysis, and upon the composition of wastes that are or have been managed at the Facility. The rationale for selection of all parameters shall be provided.

C. Reporting

Concurrent with the Site Investigation Work Plan, Respondent shall submit a comprehensive stand alone data document that contains: 1) a facility map that includes all the sampling, boring and well locations; 2) all results for constituents monitored in each medium (soil, groundwater, surface water, etc.); 3) all groundwater elevation data; and, 4) all well and boring logs. This stand alone data document shall be updated to include the location of each new sampling, boring and well, and the results of all validated data, groundwater elevation data and well and boring logs as such data become available. This updated comprehensive stand alone data document shall be submitted to EPA annually until the termination of this Order, beginning one year from the date of the initial submission of the comprehensive stand alone data document. The information required in the initial and each subsequent comprehensive stand alone data document shall be in the form of charts, graphs, maps, diagrams or tables, as determined by EPA. In addition, concurrent with the submission of each periodic progress report, Respondent shall submit a stand alone data document addendum that includes any new: 1) sampling, boring and well locations; 2) results for constituents monitored in each medium; 3) groundwater elevation data; and, 4) well and boring logs that become available during the period of time covered by the progress report. Each stand alone data document addendum shall be submitted in the same format as the original comprehensive stand alone data document, unless determined otherwise by EPA. EPA may require approval of any of the stand alone data documents and exercise the process set forth in Section XII (EPA Approval of Plans and Other Submissions) of the Order in the event that EPA determines that such action is necessary.

The Site Investigation Work Plan shall specify the outline and format for the Site Investigation Report to present the findings of the investigation. The Site Investigation Work Plan shall specify groundwater data reporting procedures which are consistent with EPA Region X Groundwater Data Management System. These specifications shall include, but are not limited to, the following:

1. Construction of contour maps of groundwater concentrations for parameters selected based on the results of the initial round of sampling, or subsequent sampling, and subject to EPA review and approval. Contoured parameters will include the most abundant and representative constituents from each contaminant group including volatile organic, semi-volatile organic, metals, and pesticides and dioxins/furans, if detected. Additional constituents may be selected for contouring due to their high mobility or high toxicity. All contour maps shall be presented at a scale of one inch equals 50 feet or other such scale approved by EPA, and shall show the Site and cultural features sufficient for clear representation of the plume, and all affected down-gradient areas. All wells in the sampling program shall be accurately located on the map, and the concentrations of each constituent shall be clearly visible. Data manipulation, such as kriging, is not to be employed. Contour intervals shall be selected to clearly indicate changes in concentration within the plume, and are subject to EPA review and approval.

2. Construction of flow nets, maps and cross sections showing surface discharges of groundwater that flows beneath the Site, delineating the extent of discharge of contaminated groundwater, and showing areas of groundwater discharge that may become contaminated due to continued

migration of contaminants in the subsurface;

3. Maps and cross sections depicting the estimated migration rates for contaminants in groundwater, considering advection, dispersion, adsorption, and degradation processes. The migration evaluations shall be prepared for two species from each of the following classes of compounds that are identified as originating at or migrating from the Site: volatile organic compounds, base neutral and acid extractable organic compounds, metals and cyanide compounds. In general, the species selected shall be the most mobile contaminants from each class that have been, or are likely to be, released at or from the Facility.

   The Site Investigation Report shall describe all input data algorithms, estimates, assumptions, boundary conditions, sensitivity analyses, and model calibration procedures used to derive these predictions of groundwater contaminant migration;

4. The nature and extent of surface water and sediment contamination due to releases at or from the Facility, including maps depicting the concentration distribution over the sample locations illustrated at a scale of one inch equals 50 feet, or other such scale as approved by EPA; and

5. An assessment of the fate and transport of contamination in surface water and sediment, including maps depicting the maximum extent of exposure of aquatic organisms to contaminant concentrations at levels that may have adverse impacts, to the extent these impacts can be distinguished from those due to ambient surface water and sediment quality in the area.

6. The Site Investigation Report must contain tabular displays that present the results for constituents monitored in each medium (soil, groundwater, surface water, etc.) for both historic monitoring events and for monitoring events undertaken during the implementation of the Site Investigation Work Plan.

ATTACHMENT C

SAMPLING AND ANALYSIS AND DATA MANAGEMENT PLAN
ADMINISTRATIVE ORDER ON CONSENT
U.S. EPA DOCKET NO.

The Site Investigation Work Plan, or any Additional Work Plan required of Respondent pursuant to the Order, shall include a plan to document all monitoring procedures (including all sampling, field measurements, and sample analysis performed during the investigation to characterize the environmental setting, source of contamination, and concentration of contaminants) so as to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented. The plan shall include the following:

A. Data Collection Quality Assurance Plan

1. Data Collection Strategy

The strategy section of the Data Collection Quality Assurance Plan shall include, but not be limited to, the following:

a. Description of the intended uses for the data, and the necessary level of precision and accuracy for these intended uses; and,

b. Description of methods and procedures to be used to assess the precision, accuracy, and completeness of the measurement data.

2. Sampling

The Sampling section of the Data Collection Quality Assurance Plan shall discuss:

a. Sampling methods including identification of sampling equipment, purging procedures, and decontamination procedures to be used;

b. Criteria for selecting appropriate sampling locations, depths, etc.;

c. Criteria for providing a sufficient number of sampling sites;

d. Methods for measuring all necessary ancillary data;

e. Criteria for determining conditions under which sampling should be conducted;

f. Criteria for identifying which parameters are to be measured, and criteria for determining where specific parameters will be measured;

g. Criteria for identifying the type of sampling (e.g., composites vs. grabs) and number of samples to be collected;

h. Measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;

i. Methods and documentation of field sampling operations and procedures, including:

(1) Documentation of procedures for preparation of reagents or supplies which become an integral part of the sample (e.g., filters and adsorbing reagents);

(2) Procedures and forms for recording the exact location, sampling conditions, sampling equipment and visual condition of samples;

(3) Documentation of specific sample preservation method;

(4) Calibration of field devices;

(5) Collection of replicate samples;

(6) Submission of field-biased blanks, where appropriate;

(7) Potential interferences present at the facility;

(8) Field equipment listing and sample containers;

(9) Sampling order; and,

(10) Decontamination procedures.

j. Selection of appropriate sample containers;

k. Sample preservation methods; and,

l. Chain-of-custody procedures, including:

(1) Standardized field tracking reporting forms to establish sample custody in the field prior to and during shipment; and,

(2) Pre-prepared sample labels containing all information necessary for effective sample tracking.

3. Field Measurements

The Field Measurements section of the Data Collection Quality Assurance Plan shall discuss:

a. Selecting appropriate field measurement locations, depths, etc.;

b. Providing a sufficient number of field measurements;

c. Measuring all necessary ancillary data;

d. Determining conditions under which field measurements should be conducted;

e. Determining which media are to be addressed by appropriate field measurements (e.g., groundwater, air, soil, sediment, etc.);

f. Determining which parameters are to be measured and where;

g. Selecting the frequency of field measurement and length of field measurements period; and,

h. Documenting field measurement operations and procedures, including:

(1) Procedures and forms for recording raw data and the exact location, time, and sampling conditions;

(2) Calibration of field devices;

(3) Collection of replicate measurements;

(4) Submission of field-biased blanks, where appropriate;

(5) Potential interferences present at the Site;

(6) Field equipment listing; and,

(7) Decontamination procedures.

4. Sample Analysis

The Sample Analysis section of the Data Collection Quality Assurance Plan shall specify the following:

a. Chain-of-custody procedures, including:

(1) Certification that all samples obtained pursuant to this Order for analysis will be delivered to a responsible person at the recipient laboratory who is authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;

(2) Provision for a laboratory sample custody log consisting of serially numbered standard lab-tracing report sheets; and,

(3) Specification of chain-of-custody procedures for sample handling, storage, and dispersement for analysis.

b. Sample storage procedures and holding times;

c. Sample preparation methods;

d. Analytical procedures, including:

(1) Scope and application of the procedure;

(2) Sample matrix;

(3) Potential interferences;

(4) Precision and accuracy of the methodology; and,

(5) Method detection limits.

e. Calibration procedures and frequency;

f. Data reduction, validation, and reporting; and,

g. Internal quality control checks, laboratory performance, systems audits and frequency, including:

(1) Method blank(s);

(2) Laboratory control sample(s);

(3) Calibration check sample(s);

(4) Replicate sample(s);

(5) Matrix-spiked sample(s);

(6) "Blind" quality control;

(7) Control charts;

(8) Surrogate samples;

(9) Zero and span gases; and,

(10) Reagent quality control checks.

B. Data Management Plan

Respondent shall develop and initiate a Data Management Plan to document and track investigation data and results. This plan shall identify and establish data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents. The plan shall also provide the format to be used to present the raw data and conclusions of the investigation.

1. Data Record

The data management system shall track the following information for each data record:

a. Unique sample or field measurement code;

b. Sampling or field measurement location including surveyed horizontal coordinates and elevation of the sample location, and sample or measurement type;

c. Sampling or field measurement raw data;

d. Laboratory analysis ID number;

e. Result of analysis (e.g., concentration);

f. Elevations of reference points for all groundwater level measurements, including water level elevation, top of casing elevation, and ground surface elevation; and,

g. Electronic data files of all groundwater, soil, surface water, and sediment analytical data that can be down-loaded to the format specifications of the EPA Region 10 groundwater data management system.

2. Tabular Displays

The following data shall be presented in tabular displays:

a. Unsorted (raw) data;

b. Results for each medium and each constituent monitored;

c. Data reduction for statistical analysis;

d. Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and,

e. Summary data.

3. Graphical Displays

At a minimum, the following data shall be presented in graphical formats (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.):

a. Displays of sampling location and sampling grid;

b. Identification of boundaries of sampling area and areas where more data are required;

c. Displays of concentrations of contamination at each sampling location;

d. Areal and vertical displays of contamination concentrations, concentration averages, and concentration maxima, including isoconcentration maps for selected constituents, subject to EPA review and approval, found in environmental media at the Facility;

e. Illustrations of changes in concentration in relation to distance from the source, time, depth, or other parameters;

f. Identification of features affecting intramedia transport and identification of potential receptors;

g. For each round of groundwater level measurements, maps showing the distribution of head measurements in each aquifer at a scale of one inch equals 50 feet and a contour interval of one-half foot or other scale as approved by EPA; and,

h. For each well, provide a hydrograph that shows the distribution of water level

measurements taken during the site investigation for the time interval of the investigation. Multiple wells may be shown on one hydrograph if appropriate.

C. Data Reporting

Unless otherwise specified in the Order, Respondent shall provide to EPA all data obtained pursuant to this Order within thirty (30) days of receipt by Respondent, or after completion of quality assurance/quality control activities, if applicable. This notification requirement shall also apply to any other information obtained from activities conducted, or data obtained, by Respondent that may influence activities pursuant to this Order.

ATTACHMENT D
SCOPE OF WORK FOR CORRECTIVE MEASURES STUDY
ADMINISTRATIVE ORDER ON CONSENT
U.S. EPA DOCKET NO.

The purpose of this Corrective Measure Study (CMS) is to identify and evaluate and recommend potential corrective measure alternatives for the releases that have been identified at the Site.

The scope of the CMS will depend on the needs at the Site as determined by the Site Investigation; EPA may determine that an abbreviated CMS is sufficient for the Site. Deviations from this Scope of Work may be made only with prior EPA approval, based on the findings of the Site Investigation. In general, the CMS will consist of the following four tasks:

TASK 1: IDENTIFICATION AND DEVELOPMENT OF CORRECTIVE ACTION ALTERNATIVES

Based on the results of the Site Investigation, Respondent shall identify, screen, and develop alternatives for removal, containment, treatment, and/or other remediation of the contamination based on the objectives established for the corrective action.

A. Description of Current Situation

Respondent shall submit an update to the information describing the current situation at the Site and the known nature and extent of the contamination as documented by the Site Investigation. Respondent shall also make a site-specific statement of the purpose for the corrective measures, based on the results of the Site Investigation. The statement of purpose should identify the actual or potential exposure pathways that should be addressed by corrective measures.

B. Screening of Corrective Measure Technologies

Respondent shall review the results of the Site Investigation and identify and describe technologies which might be suitable for application at the Site, given the nature and extent of contaminants and the risk posed to the receptors. Respondent shall screen corrective measure technologies and any supplemental technologies to eliminate those that may prove infeasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objectives within a reasonable time period. This screening process shall focus on eliminating those technologies which have severe limitations for a given set of waste and site-specific conditions. The screening step may also eliminate technologies based on inherent technology limitations.

Site, contaminant, and technology characteristics which are used to screen inapplicable technologies are described in more detail below:

1. Site Characteristics

Site data should be reviewed to identify conditions that may limit or promote the use of certain technologies. Any technology which is clearly precluded from use by Site characteristics should be eliminated from further consideration.

2. Contaminant Characteristics

Identification of contaminant characteristics that limit the effectiveness or feasibility of technologies is an important part of the screening process. Technologies clearly limited by contaminant characteristics at the Site may be eliminated from consideration. Contaminant characteristics particularly affect the feasibility of on-site methods, direct treatment methods, and land disposal; and,

3. Technology Limitations

During the screening process the level of technology development, performance record, and inherent construction, operation, and maintenance problems should be identified for each technology considered. Technologies that have proven to be unreliable, perform poorly, or have not been fully demonstrated in the field at other sites, may be eliminated in the screening process.

C. Identification of Corrective Measure Alternatives

Respondent shall develop the corrective measure alternatives based on the corrective action objectives and analysis of corrective measure technologies. Respondent shall rely on engineering practice to determine which of the identified technologies appear most suitable for the site. Technologies can be combined to form the overall corrective action alternatives. The alternatives developed and presented in the Report should represent a workable number of options that each appear to adequately address all site problems and corrective action objectives. Each alternative may consist of an individual technology or a combination of technologies. Respondent shall document the reasons for excluding technologies.

TASK 2: EVALUATION OF CORRECTIVE MEASURE ALTERNATIVE(S)

Respondent shall describe each corrective measure alternative that passes through the initial screening in Task 1 and evaluate each corrective measure alternative and its components. The evaluation shall be based on technical, environmental, human health, and institutional concerns. Respondent shall also develop cost estimates of each corrective measure.

A. Technical/Environmental/Human Health/Institutional

Respondent shall provide a description of each corrective measure alternative. In addition, for each corrective measure provide an evaluation which includes but is not limited of the following factors:

1. Technical

Respondent shall evaluate each corrective measure alternative based on performance, reliability, implementability, and safety.

a. Respondent shall evaluate performance based on the effectiveness and useful life of the corrective measure:

(1) Effectiveness shall be evaluated in terms of the ability to perform intended functions, such as containment, diversion, removal, destruction, and/or treatment. The effectiveness of each corrective measure shall be determined either through design specifications or by performance evaluation. Any specific waste or Site characteristics which could potentially impede effectiveness shall be considered. The evaluation should also consider the effectiveness of combinations of technologies; and,

(2) Useful life is defined as the length of time the level of effectiveness can be maintained. Many corrective measure technologies deteriorate with time. Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually may require replacement. Each corrective measure shall be evaluated in terms of the projected service lives of its component technologies. Resource availability in the future life of the technologies, as well as appropriateness of the technologies, must be considered in estimating the useful life of the project.

b. Respondent shall provide information on the reliability of each corrective measure alternative including their operation and maintenance requirements and their demonstrated reliability:

(1) Operation and maintenance requirements include the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or complex operation and maintenance activity should be regarded as less reliable than technologies requiring little or straightforward operation and maintenance. The availability of labor and materials to meet these requirements shall also be considered; and,

(2) Demonstrated and expected reliability is a way of measuring the risk and effect of failure. Respondent shall evaluate, at a minimum: whether the technologies have been used effectively under similar conditions; whether the combination of technologies have been used together effectively; whether failure of any one technology has an immediate impact on receptors; and whether the corrective measure has the flexibility to deal with uncontrollable changes at the Site.

c. Respondent shall describe the implementability of each corrective measure alternative including the relative ease of installation (constructability) and the time required to achieve a given level of response;

(1) Constructability is determined by conditions both internal and external to the Site conditions and include such items as location of underground utilities, depth to water table, heterogeneity of subsurface materials, and location of the Site (e.g., remote location vs. a congested urban area). Respondent shall evaluate what measures can be taken to facilitate construction under these conditions. External factors which affect implementation include the need for special permits or agreements, equipment availability, and the location of suitable off-site treatment or disposal facilities; and,

(2) Time has two components that shall be addressed: the time it takes to implement a corrective measure; and the time it takes to actually see beneficial results. Beneficial results are defined as the reduction of contaminants to some pre-established level, acceptable to EPA.

d. Respondent shall evaluate each corrective measure alternative with regard to safety. This evaluation shall include threats to the safety of nearby communities and environments as well as those to workers during implementation. Factors to consider include fire, explosion, and exposure to hazardous substances.

2. Environmental

Respondent shall perform an Environmental Assessment for each corrective measure alternative. The Environmental Assessment shall focus on the Site conditions and pathways of

contamination actually addressed by each alternative. The Environmental Assessment for each alternative will include, at a minimum, an evaluation of: the short and long-term beneficial and adverse effects of the response alternative; adverse effects on environmentally sensitive areas or receptor; and an analysis of measures to mitigate adverse effects.

3. Human Health

Respondent shall assess each corrective measure alternative in terms of the extent to which it mitigates short and long-term exposure to any residual contamination and protects human health both during and after implementation of corrective measure. The assessment will describe the levels and characterizations of contaminants on Site, potential exposure routes, and potentially affected population. Each alternative will be evaluated to determine the level of exposure to contaminations and the reduction over time. For management of mitigation measures, the relative reduction of impact will be determined by comparing residual levels of each alternative with existing criteria, standards, or guidelines acceptable to EPA.

4. Institutional

Respondent shall assess relevant institutional needs for each alternative. Specifically, the effects of federal, state, and local environmental and public health standards, regulations, guidance, advisories, ordinances, or community relations on the design, operation, and timing of each alterative.

B. Cost Estimate

Respondents shall develop an estimate of the cost of each corrective measure alternative including the cost for each phase of the corrective measure. The cost estimate shall include but not be limited to, capital costs and operation and maintenance costs.

TASK 3: JUSTIFICATION AND RECOMMENDATION OF CORRECTIVE MEASURES

Respondent shall justify and recommend one or more corrective measure alternatives using technical, human health, and environmental criteria. This recommendation shall include summary tables which allow the alternatives to be understood and compared easily. Trade-offs among health risks, environmental effects, and other pertinent factors shall be highlighted. EPA will select the corrective measures based on the results of Tasks 2 and 3. At a minimum, the following criteria will be used to justify the final corrective measures:

A. Technical

1. Performance -- Corrective measures which are most effective at performing their intended functions and maintaining the performance over extended periods of time will be given preference;

2. Reliability -- Corrective measures which do not require frequent or complex operation and maintenance activities, and that have proven effective under waste and Site conditions similar to those anticipated will be given preference;

3. Implementability -- Corrective measures which can be constructed and operated to reduce levels of contamination to attain or exceed applicable standards in the shortest period of time will be preferred; and,

4. Safety -- Corrective measures which pose the least threat to the safety of nearby residents and environments as well as workers during implementation will be preferred.

B. Human Health

Corrective measures must comply with existing EPA criteria, standards, or guidelines for the protection of human health. Corrective measures which provide the minimum level of exposure with time are preferred.

C. Environmental

Corrective measures must comply with existing EPA criteria, standards or guidlines for the protection of ecological receptors. Corrective measures providing the greatest environmental protection and posing the least adverse impact (or greatest improvement) over the shortest period of time on the environment will be favored.

TASK 4: REPORTS

Respondent shall prepare a Corrective Measure Study Report presenting the results of Tasks 1 through 3 and recommending a corrective measure alternative.

A. Draft

The Report shall, at a minimum, include:

1. A description of the Site, a site topographic map, and preliminary layouts;

2. A summary of each corrective measures, including:

   a. Description of the corrective measure or measures and rationale for selection;

   b. Performance expectations, including an evaluation of the overall protectiveness of human health and the environment, ability to attain the corrective action objectives, ability to control the sources of releases, and an assessment of short-term and of long-term reliability and effectiveness, including, but not limited to, the methodology used to estimate the short-term and long-term reduction of toxicity, mobility, or volume of waste and the resulting estimate;

   c. Preliminary design criteria and rationale, including an estimate and analysis of quantity, volume, and/or toxicity of the waste generated, including, but not limited to, contaminated soil, sludge, and groundwater, and methods to minimize the volume, toxicity, and/or mobility of waste to be generated;

   d. General operation and maintenance requirements; and

   e. Long-term monitoring requirements;

3. A summary of the Site Investigation and impact on the recommended corrective measure or measures:

   a. Field studies (groundwater, surface water, soil, air); and,

   b. Treatability studies (bench scale, pilot scale), if any;

4. Design and Implementation Precautions:

   a. Special technical problems;

b. Additional engineering and other data required;

c. Permits and regulatory requirements, including an assessment of how institutional and legal requirements including federal, State, or local environmental or public health standards, regulations, and/or ordinances will affect the design, operation, and timing of each corrective measure studied;

d. Access, easement, right-of-way;

e. Health and safety requirements; and,

f. Public involvement activities.

5. Cost Estimates and Schedules:

a. Capital cost estimate;

b. Operation and maintenance cost estimate; and,

c. Other costs

d. Project schedule (design, construction, operation).

6. A recommendation as to which corrective measure(s), in Respondent's opinion, are the most appropriate, and the rationale for such recommendation.

B. Final

Respondent shall finalize the Corrective Measure Study Report incorporating comments received from EPA on the Draft Corrective Measure Study Report, as set forth in the Order.

ATTACHMENT E

SCOPE OF WORK FOR CORRECTIVE MEASURES IMPLEMENTATION
ADMINISTRATIVE ORDER ON CONSENT
U.S. EPA DOCKET NO.

The purpose of this Corrective Measure Implementation (CMI) is to design, construct, operate, maintain, and monitor the performance of the corrective measures selected to protect human health and the environment.

The scope of the Corrective Measure Implementation Plan will depend on the needs of the Site as determined by the Corrective Measures Study. Deviations from this Scope of Work may be made only with prior EPA approval, based on the nature of the selected corrective measure. In general, the Corrective Measure Implementation program will consist of the following four tasks:

TASK 1: CORRECTIVE MEASURE IMPLEMENTATION WORK PLAN

Respondent shall prepare a Corrective Measure Implementation Work Plan. This Work Plan will include the development and implementation of several plans, which require concurrent preparation. It may be necessary to revise plans as the work is performed to focus efforts on a particular problem. The CMI Work Plan includes the following:

A. Program Management Plan

Respondent shall prepare a Program Management Plan which will document the overall management strategy for performing the design, construction, operation, maintenance, and monitoring of the selected corrective measure(s). The plan shall document the responsibility and authority of all organizations and key personnel involved with the implementation. The Program Management Plan will also include a description of qualifications of key personnel directing the Corrective Measure Implementation program, including contractor personnel.

B. Public Involvement Plan

Respondent shall revise the Public Involvement Plan required under this Order to reflect any changes in the level of concern or information needs of the community for design and construction activities.

1. Specific activities which must be conducted during the design stage are:

   a. Revise the Public Involvement Plan to reflect knowledge of citizen concerns and involvement at this stage of the process; and,

   b. Prepare and distribute a public notice and an updated fact sheet at the completion of engineering design.

2. Depending on citizen interest, specific activities that may be conducted during the construction stage could range from group meetings to fact sheets on the technical status.

TASK 2: CORRECTIVE MEASURE DESIGN

Respondent shall prepare final construction plans and specifications to implement the corrective measures at the Site as selected by EPA.

A. Design Plans and Specifications

Respondent shall develop clear and comprehensive design plans and specifications which include, but are not limited to, the following:

1. Discussion of the design strategy and the design basics, including:

   a. Compliance with all applicable or relevant and appropriate environmental and public health standards; and,

   b. Minimization of environmental and public health impacts.

2. Discussion of the technical factors including:

   a. Use of currently used and accepted environmental control measures and technology;

   b. The constructability of the design; and,

   c. Use of currently used and acceptable construction practices and techniques.

3. Description of assumptions made and adequate justification of those assumptions;

4. Discussion of the possible sources of error and possible operation and maintenance problems;

5. Engineering drawings of the proposed design;

6. Tables listing equipment and specifications;

7. Appendices including:

   a. Sample calculations (one example presented and explained clearly for significance or unique design calculations);

   b. Results of laboratory or field tests.

B. Operation and Maintenance Plan

Respondent shall prepare an Operation and Maintenance Plan to cover both installation and long-term maintenance of the selected corrective measures. The plan shall be composed of the following elements:

1. Description of potential operating problems:

   a. Description of analysis of potential operation problems;

   b. Sources of information regarding problems; and,

c. Common and/or anticipated remedies.

2. Description of alternate operation and maintenance:

   a. Should systems fail, alternate procedures to prevent undue hazard; and,

   b. Analysis of vulnerability and additional resource requirements should a failure occur.

3. Safety Plan:

   a. Description of precautions, or necessary equipment, etc., for site personnel; and,

   b. Safety tasks required in event of systems failure.

4. Description of equipment:

   a. Equipment identification;

   b. Installation of monitoring components;

   c. Maintenance of site equipment; and,

   d. Replacement schedule for equipment and installed components.

5. Records and reporting mechanisms:

   a. Daily operating logs;

   b. Laboratory records;

   c. Records for operating costs;

   d. Mechanism for reporting emergencies; and,

   e. Personnel and maintenance records.

A Draft Operation and Maintenance Plan shall be submitted simultaneously with the Prefinal Design Document required by Task 2.F.6 of this Attachment, and the Final Operation and Maintenance Plan shall be submitted simultaneously with the Final Design Documents.

C. Cost Estimate

Respondent shall develop cost estimates for the purpose of assuring that the Respondent has the financial resources necessary to construct and implement the selected corrective measure(s). The cost estimate developed in the CMS shall be refined to reflect the more detailed/accurate design plans and specifications being developed. The cost estimate shall include, at a minimum, both capital costs and operation and maintenance costs. An Initial Cost Estimate shall be submitted simultaneously with the Prefinal Design submission and the Final Cost Estimate with the Final Design Document.

D. Project Schedule

Respondent shall develop Project Schedules for construction and implementation of the selected corrective measures which identifies timing for initiation and completion of all critical path tasks. Respondent shall specifically identify dates for completion of the project and major interim milestones. An Initial Project Schedule shall be submitted simultaneously with the Prefinal Design Document submission and the final Project Schedule with the Final Design Document.

E. Construction Quality Assurance Objectives

Respondent shall identify and document the objectives and framework for the development of a construction quality assurance program including, but not limited to, the following: responsibility and authority; personnel qualifications; inspection activities; sampling requirements; and documentation.

F. Design Phases

The design of the selected corrective measures should include the phases outlined below.

1. Preliminary Design

Respondent shall submit the preliminary design when the design effort is approximately 30 percent complete. At this stage, Respondent shall have field verified the existing conditions of the Site. The preliminary design shall reflect a level of effort such that the technical requirements of the project have been addressed and outlined so that they may be reviewed to determine if the final design will provide operable and usable corrective measures. Supporting data and documentation shall be provided with the design documents defining the functional aspects of the program. The scope of the technical specifications shall be outlined in a manner reflecting the final specifications. Respondent shall include with the preliminary submission, design calculations reflecting the same percentage of completion as the designs they support.

2. Intermediate Design

Complex project design may necessitate EPA review of the design documents between the preliminary and the prefinal/final design. At the discretion of EPA, a design review may be required at 60 percent completion of the project. This intermediate design submittal shall include the same elements as the prefinal design.

3. Correlating Plans and Specifications

General correlation between drawings and technical specifications is a basic requirement for all sets of working construction plans and specifications. Before submitting the project specifications, Respondent shall:

a. Coordinate and cross-check the specifications and drawings; and,

b. Complete the proofing of the edited specifications and required cross-checking of all drawings and specifications.

These activities shall be completed prior to the 95 percent prefinal submittal to EPA.

4. Equipment Start-up and Operator Training

Respondent shall prepare, and include in the technical specifications governing treatment systems, contractor requirements for providing: appropriate service visits by experienced personnel to supervise the installation, adjustment, start-up, and operation of the treatment systems, and training covering appropriate operations procedures once the start-up has been successfully accomplished.

5. Additional Studies

Corrective Measure Implementation may require additional studies to supplement the available technical data. At the direction of EPA for any such studies required, Respondent shall furnish all services, including field work as required, materials, supplies, plant, labor, equipment, investigations, studies, and superintendence. Sufficient sampling, testing, and analysis shall be performed to optimize the required treatment and/or disposal operations and systems. There may be an initial meeting with EPA and all principal personnel involved in the development of the additional studies. The purpose of the meeting will be to discuss objectives, resources, communication channels, personnel responsibilities, and orientation of the Site, etc. An interim and final report documenting the additional studies may be required by EPA. The interim report shall present the results of the testing with the recommended treatment or disposal systems (including options). A review conference may be scheduled after the interim report has been reviewed by all interested parties. The final report shall include all data taken during the testing and a summary of the results of the studies.

6. Prefinal and Final Design

If required by EPA, Respondent shall submit the prefinal/final design documents in two parts. The first submission shall be at 95 percent completion of design (i.e., prefinal). After approval of the prefinal submission, Respondent shall execute the required revisions and submit the final documents 100 percent complete with reproducible drawings and specifications.

The prefinal design submittal shall consist of the Design Plans and Specifications, Operation and Maintenance Plan, Capital and Operating and Maintenance Cost Estimate, Project Schedule, Quality Assurance Plan, and Specifications for the Health and Safety Plan.

The final design submittal shall include: Final Design Plans and Specifications (100 percent complete), Respondent's Final Construction Cost Estimate, the Final Operation and Maintenance Plan, Final Quality Assurance Plan, Final Project Schedule, and Final Health and Safety Plan specifications. The quality of the design documents should be such that the Respondent would be able to include them in a bid package and invite contractors to submit bids for the construction project.

TASK 3: CORRECTIVE MEASURE CONSTRUCTION

Following EPA approval of the final design, Respondent shall develop and implement a construction quality assurance (CQA) plan to ensure, with a reasonable degree of certainty, that the completed corrective measures meets or exceeds all design criteria, plans, and specifications. The CQA Plan is a site-specific document which must be submitted to EPA for approval prior to the start of construction. At a minimum, the CQA Plan should include the elements summarized below. Upon EPA approval of the CQA Plan, the Respondent shall construct and implement

the corrective measure in accordance with the approved design, schedule, and the CQA Plan. The Respondent shall also implement the elements of the approved Operation and Maintenance Plan.

A. Responsibility and Authority

The responsibility and authority of all organizations (e.g., technical consultants, construction firms, etc.) and key personnel involved in the construction of the selected corrective measure(s) shall be described in the CQA Plan. Respondent must identify a CQA officer and the necessary supporting inspection staff.

B. Construction Quality Assurance Personnel Qualifications

The qualifications of the CQA officer and supporting inspection personnel shall be presented in the CQA Plan to demonstrate that they possess the training and experience necessary to fulfill their identified responsibilities.

C. Inspection Activities

The observations and tests that will be used to monitor the construction and/or installation of the components of the selected corrective measure(s) shall be summarized in the CQA Plan. The plan shall include the scope and frequency of each type of inspection. Inspections shall verify compliance with all applicable environmental requirements and include, but not be limited to, air quality and emissions monitoring records, waste disposal records (e.g., RCRA transportation manifests), etc. The inspection should also ensure compliance with all applicable health and safety procedures. In addition to oversight inspections, the Respondent shall conduct the following activities.

1. Preconstruction Inspection and Meeting

Respondent shall conduct a preconstruction inspection and meeting to:

a. Review methods for documenting and reporting inspection data;

b. Review methods for distributing and storing documents and reports;

c. Review work area security and safety protocol;

d. Discuss any appropriate modifications of the CQA Plan to ensure that Ste specific considerations are addressed; and,

e. Conduct a Site walk-around to verify that the design criteria, plans, and specifications are understood and to review material and equipment storage locations.

The preconstruction inspection and meeting shall be documented by a designated person and minutes should be transmitted to all parties.

2. Prefinal Inspection

Upon preliminary project completion, Respondent shall notify EPA for the purposes of conducting a prefinal inspection. The prefinal inspection will consist of a walk-through inspection of the entire project site. The inspection is to determine whether the project is complete and consistent with the contract documents and the EPA approved corrective measures. Any outstanding construction items discovered during the inspection will be

identified and noted. Treatment equipment will be operationally tested by Respondent. Respondent will certify that the equipment has performed to meet the purpose and intent of the specifications. Retesting will be completed where deficiencies are revealed. The Prefinal Inspection Report should outline the outstanding construction items, actions required to resolve items, completion date for these items, and date for final inspection.

3. Final Inspection

Upon completion of any outstanding construction items, Respondent shall notify EPA for the purpose of conducting a final inspection. The final inspection will consist of a walk-through inspection of the project site. The Prefinal Inspection Report will be used as a checklist with the final inspection focusing on the outstanding construction items identified in the prefinal inspection. Confirmation shall be made that outstanding items have been resolved.

D. Sampling Requirements

The sampling activities, sample size, sample locations, frequency of testing, acceptance and rejection criteria, and plans for correcting problems as addressed in the project specifications should be presented in the CQA Plan.

E. Documentation

Reporting requirements for CQA activities shall be described in the CQA Plan. This should include such items as daily summary reports, inspection data sheets, problem identification and corrective measures reports, design acceptance reports, and final documentation. Provisions for the final storage of all records also should be presented in the CQA Plan.

TASK 4: REPORTS

Respondent shall prepare plans, specifications, and reports as set forth in Tasks 1 through 3 to document the design, construction, operation, maintenance, and monitoring of the corrective measure. The documentation shall include, but not be limited to, the following:

A. Progress

1. Respondent shall provide EPA with quarterly progress reports during the design and construction phases, containing:

   a. A description and estimate of the percentage of the CMI completed;

   b. Summaries of all findings;

   c. Summaries of all changes in the CMI during the reporting period;

   d. Summaries of all contacts with representatives of the local community, public interest groups or state government during the reporting period;

   e. Summaries of all problems or potential problems encountered during the reporting period;

   f. Actions being taken to rectify problems;

g. Changes in personnel during the reporting period;

h. Projected work for the next reporting period; and,

i. Copies of daily reports, inspection reports, laboratory/monitoring data, etc.

2. Respondent shall provide EPA with monthly progress reports during operation of the selected corrective measure(s), demonstrating the effectiveness of the corrective actions in accordance with the final site-specific performance standards, and describing all operation and maintenance activities performed during the reporting period. This progress report shall include items c through i specified above in Task 4.A.1.

B. Draft

1. Respondent shall submit a draft Corrective Measure Implementation Plan as outlined in Task 1.

2. Respondent shall submit draft Construction Plans and Specifications, Design Reports, Cost Estimates, Schedules, Operation and Maintenance Plans, and Study Reports as outlined in Task 2.

3. Respondent shall submit a draft Construction Quality Assurance Program Plan and Documentation as outlined in Task 2.

C. Final

1. Respondent shall finalize the Corrective Measure Implementation Plan, Construction Plans and Specifications, Design Reports, Cost Estimates, Project Schedule, Operation and Maintenance Plan, Study Reports, Construction Quality Assurance Program Plan/Documentation, and the Corrective Measure Implementation Report incorporating comments received on draft submissions.

2. At the "completion" of the construction of the selected corrective measures, Respondent shall submit a Corrective Measure Construction Report to EPA. The Report shall document that the project is consistent with the design specifications, and that the corrective measure is performing adequately. The Report shall include, but not be limited to, the following elements:

a. Synopsis of the corrective measure(s) and certification of the design and construction;

b. Explanation of any modifications to the plans and why these were necessary for the project;

c. Listing of the corrective action performance standards, established in conjunction with EPA during the CMS, for judging the effectiveness and efficiency of the corrective measure;

d. Results of site monitoring, indicating that the corrective measure will meet or exceed the performance standards; and,

e. Explanation of the operation and maintenance (including monitoring) to be undertaken at the Site.

This report should include all of the inspection summary reports, inspection data sheets, problem identification and corrective measure reports, photographic reporting data sheets, design engineers' acceptance reports, deviations from design and material specification (with justifying documentation), and as-built drawings.

ATT F
RCRA
CAP
(NOT COPIED)

Development and Purpose of the Site Conceptual Model

Decisions regarding the technical practicability of ground-water restoration must be based on a thorough characterization of the physical and chemical aspects of the site. Characterization data should describe site geology and hydrology; contamination sources, properties, and distribution; release mechanisms and rates; fate and transport processes; current or potential receptors; and other elements that define the contamination problem and facilitate analysis of site restoration potential. While the elements of such a model may vary from site to site, some generalizations can be made about what such a model would contain. Examples of these elements are provided in Figure 4. The site conceptual model synthesizes data acquired from historical research, site characterization, and remediation system operation.

The site conceptual model typically is presented as a summary or specific component of a site investigation report. The model is based on, and should be supported by, interpretive graphics, reduced and analyzed data, subsurface investigation logs, and other pertinent characterization information. The site conceptual model is not a mathematical or computer model, although these may be used to assist in developing and testing the validity of a conceptual model or evaluating the restoration potential of the site. The conceptual model, like any theory or hypothesis, is a dynamic tool that should be tested and refined throughout the life of the project. As illustrated in Figure 5, the model should evolve in stages as information is gathered during the various phases of site remediation. This iterative process allows data collection efforts to be designed so that key model hypotheses may be tested and revised to reflect new information.

The conceptual model serves as the foundation for evaluating the restoration potential of the site and, thereby, technical impracticability as well. The TI determination must consider how site conditions impact the potential for achieving remediation goals and whether remediation performance, cost-effectiveness, and timeframe meet EPA requirements or expectations. As these determinations rely on professional judgment, the clarity of the conceptual model (and supporting information) is critical to the decision-making process.

From: Oct. 4, 1993, "Transmittal of OSWER Directive 9234.2-25 Guidance for Evaluating the Technical Impracticability of Ground-Water Restoration"

Development and Purpose of the Site Conceptual Model

Decisions regarding the technical practicability of ground-water restoration must be based on a thorough characterization of the physical and chemical aspects of the site. Characterization data should describe site geology and hydrology; contamination sources, properties, and distribution; release mechanisms and rates; fate and transport processes; current or potential receptors; and other elements that define the contamination problem and facilitate analysis of site restoration potential. While the elements of such a model may vary from site to site, some generalizations can be made about what such a model would contain. Examples of these elements are provided in Figure 4. The site conceptual model synthesizes data acquired from historical research, site characterization, and remediation system operation.

The site conceptual model typically is presented as a summary or specific component of a site investigation report. The model is based on, and should be supported by, interpretive graphics, reduced and analyzed data, subsurface investigation logs, and other pertinent characterization information. The site conceptual model is not a mathematical or computer model, although these may be used to assist in developing and testing the validity of a conceptual model or evaluating the restoration potential of the site. The conceptual model, like any theory or hypothesis, is a dynamic tool that should be tested and refined throughout the life of the project. As illustrated in Figure 5, the model should evolve in stages as information is gathered during the various phases of site remediation. This iterative process allows data collection efforts to be designed so that key model hypotheses may be tested and revised to reflect new information.

The conceptual model serves as the foundation for evaluating the restoration potential of the site and, thereby, technical impracticability as well. The TI determination must consider how site conditions impact the potential for achieving remediation goals and whether remediation performance, cost-effectiveness, and timeframe meet EPA requirements or expectations. As these determinations rely on professional judgment, the clarity of the conceptual model (and supporting information) is critical to the decision-making process.

From: Oct. 4, 1993, "Transmittal of OSWER Directive 9234.2-25 Guidance for Evaluating the Technical Impracticability of Ground-Water Restoration"

Figure 4. Elements of Site Conceptual Model

The data and analysis required for TI evaluations will be determined by EPA on a site-specific basis. This information should be presented in formats conducive to analysis and in sufficient detail to define the key site conditions and mechanisms that limit restoration potential. Types of information and analysis that may be needed for conceptual model development are illustrated below.

Background Information

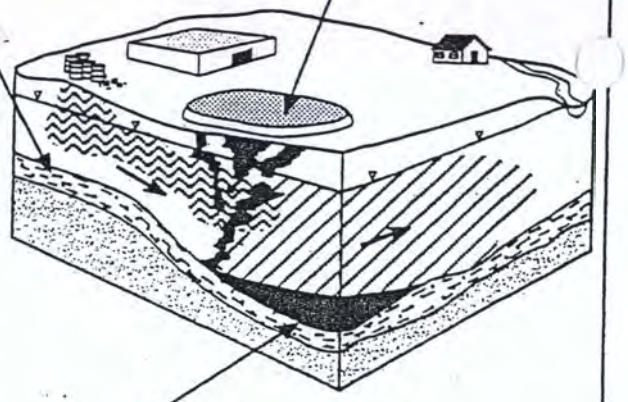
- Location of water supply wells.
- Ground-water Classification.
- Nearby wellhead protection areas or sole-source aquifers.
- Location of potential environmental receptors.

Geologic and Hydrologic Information

- Description of regional and site geology.
- Physical properties of subsurface materials (e.g., texture, porosity, bulk density).
- Stratigraphy, including thickness, lateral extent, continuity of units, and presence of depositional features, such as channel deposits, that may provide preferential pathways for, or barriers to, contaminant transport.
- Geologic structures that may form preferential pathways for NAPL migration or zones of accumulation.
- Depth to ground water.
- Hydraulic gradients (horizontal and vertical).
- Hydraulic properties of subsurface materials (e.g., hydraulic conductivity, storage coefficient, effective porosity) and their directional variability (anisotropy).
- Spatial distribution of soil or bedrock physical/hydraulic properties (degree of heterogeneity).
- Characterization of secondary porosity features (e.g., fractures, karst features) to the extent practicable.
- Temporal variability in hydrologic conditions.
- Ground-water recharge and discharge information.
- Ground-water/surface water interactions.

Contaminant Source and Release Information

- Location, nature, and history of previous contaminant releases or sources.
- Locations and characterizations of continuing releases or sources.
- Locations of subsurface sources (e.g., NAPLs).

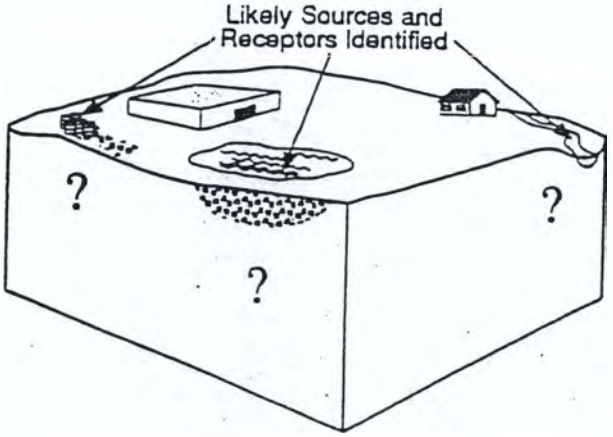


Contaminant Distribution, Transport, and Fate Parameters

- Phase distribution of each contaminant (gaseous, aqueous, sorbed, free-phase NAPL, or residual NAPL) in the unsaturated and saturated zones.
- Spatial distribution of subsurface contaminants in each phase in the unsaturated and saturated zones.
- Estimates of subsurface contaminant mass.
- Temporal trends in contaminant concentrations in each phase.
- Sorption information, including contaminant retardation factors.
- Contaminant transformation processes and rate estimates.
- Contaminant migration rates.
- Assessment of facilitated transport mechanisms (e.g., colloidal transport).
- Properties of NAPLs that affect transport (e.g., composition, effective constituent solubilities, density, viscosity).
- Geochemical characteristics of subsurface media that affect contaminant transport and fate.
- Other characteristics that affect distribution, transport, and fate (e.g., vapor transport properties).

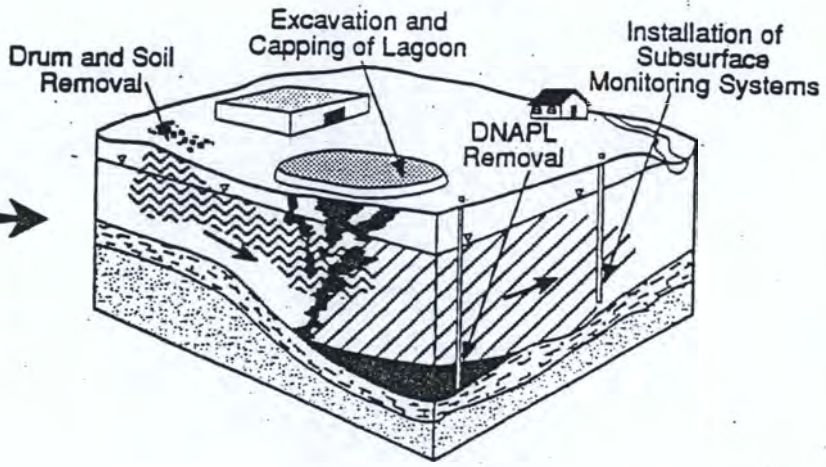
Figure 5. Evolution of the Site Conceptual Model

- Site Background and History
- Preliminary Site Investigations



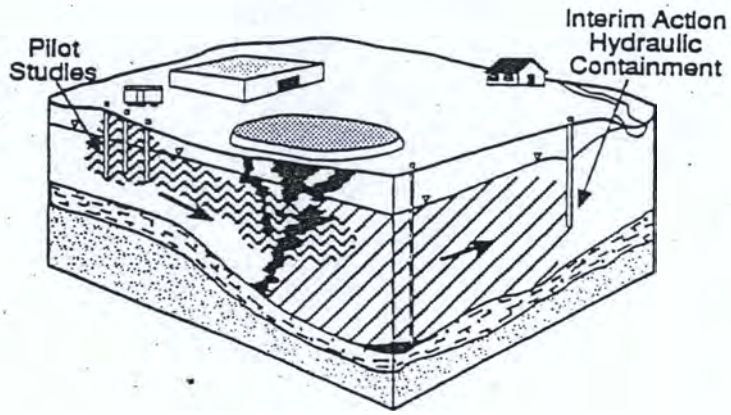
Conceptual Model Provides Basis for:

- Early Action/Removal of Near-Surface Materials
- Site Characterization Studies (RI/FS, RFI)
- Removal of Subsurface Sources (e.g., free-phase NAPLs)



Conceptual Model Provides Basis for:

- Pilot Studies
- Interim Ground-Water Actions



Conceptual Model Provides Basis for:

- Evaluation of Restoration Potential (or TI)
- Full-Scale Treatment System Design and Implementation
- Performance Monitoring and Evaluations
- Enhancement or Augmentation of Remediation System, if Required
- Future Evaluation of TI , if Required (See Figure 6)

ATTACHMENT H

LEGAL DESCRIPTION

J.H. Baxter/Arlington Plant Facility

Parcel A: That portion of the North 660 feet of the NE ¼ of the NE ¼ of Section 22, Township 31 North, Range 5 E., W.M., lying West of the Northern Pacific Railway right of way, EXCEPT the West 396 feet thereof and EXCEPT the North 20 feet thereof, and EXCEPT county road along East side thereof *and* that portion of the NE ¼ of the NE ¼ of Section 22, Township 31 North, Range 5 E., W.M., lying Westerly of Northern Pacific Railway right of way; EXCEPT that portion lying within the North 660 feet thereof, AND EXCEPT the South 20 feet thereof, and a strip 40 feet wide along the West line of Northern Pacific Railway right of way and EXCEPT the West 396 feet thereof, AND EXCEPT county road; situate in the County of Snohomish, State of Washington.

Parcel B: That portion of the Southeast quarter of the Northeast quarter of Section 22, Township 31 North, Range 5 East, W.M., lying Westerly of the right of way of Burlington Northern, Inc. (formerly Northern Pacific Railroad) EXCEPT the North 20 fee thereof, and EXCEPT the following described tract: The North 200 feet of the South 676 feet 8 inches of the West 155 feet of the East 265 feet of that portion of the Southeast quarter of the Northeast quarter of Section 22, Township 31 North, Range 5 East, W.M., lying West of the center line of the Railroad Tracks in the Northern Pacific Railroad right of way; *and* the North 60 feet of the South 580 feet of the Southeast of the Northeast quarter of Section 22, Township 31 North, Range 5 East, W.M., lying Easterly of the right of way of Burlington Northern Inc. (formerly Northern Pacific Railroad); *AND* The south half of the North half of the Southeast quarter of the Northeast quarter of Section 15, Township 31 North, Range 5 East, W.M. TOGETHER with the North 15 feet of the South half of the Southeast quarter of the Northeast quarter of Section 15, Township 31 North, Range 5 East, W.M., EXCEPT 67th Avenue, N.E., situate in the County of Snohomish, State of Washington.

Parcel C: The West 396 feet of the Northeast ¼ of the Northeast ¼ of Section 22, Township 31 North, Range 5 East, W.M., lying Westerly of Northern Pacific Railway right-of-way, EXCEPT that portion lying within the North 660 feet thereof; AND EXCEPT the South 20 feet thereof; AND EXCEPT County Road along the East side thereof; situate in the County of Snohomish, State of Washington.

ATTACHMENT I

TRUST AGREEMENT

Trust Agreement, the "Agreement," entered into as of [date] by and between J.H. Baxter & Company, a California Limited Partnership, the "Grantor," and Wells Fargo Bank, National Association, a national banking association primarily located in Los Angeles, California, the "Trustee."

Whereas, the United States Environmental Protection Agency, "EPA," an agency of the United States Government has issued an Administrative Order on Consent dated _____, 2001 (Order), Docket Number RCRA-10-2001-0086 for certain work to be performed at the Baxter Wood Treating Facility in Arlington, Washington, a copy of which is Attachment 1.

Whereas Paragraph 132 of the Order provides that Grantor will provide financial assurance subject to the limitations contained in Section XXIV of the Order for the performance of certain studies, specifically a Drinking Water Sampling and Alternate Water Supply Plan, a Site Investigation, and a Corrective Measure Study.

Whereas, the Grantor has elected to establish a trust to provide all or part of such financial assurance for the facility identified herein,

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this Agreement, and the Trustee is willing to act as trustee,

Now, Therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

a. The term "Grantor" means J.H. Baxter & Company and any successors or assigns of the Grantor.

b. The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

Section 2. Identification of Facilities and Amount of Financial Assurance. This Agreement pertains to the J. H. Baxter & Co. facility at 6520 188th Street, N.E. in Arlington, Snohomish County, Washington and the amount of financial assurance as set forth in the attached Schedule A.

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund, the "Fund," for the benefit of EPA. The Grantor and the Trustee intend that no third party have access to the Fund except as herein provided. The Fund is established initially as consisting of the property described in Schedule A attached hereto. Such property and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided.

The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by EPA.

Section 4. Payment for Work Performed Under the Order. The Trustee shall make payments from the Fund as the Grantor or EPA shall direct in accordance with the following procedure.

a. Grantor will submit invoices for work performed for the items enumerated in Paragraphs 51, 52 and 53 of the Order, from time to time to be paid by the Fund by delivering to Trustee a certificate ("Claim Certificate") signed by an officer of Grantor stating:

   (i) That the invoice is for work performed at the Facility in accordance with Paragraphs 51, 52, and 53 of the Order and is to be paid from the Fund.

   (ii) The amount of the claim, and

   (iii) That Grantor has sent a copy of such Claim Certificate to EPA and the date on which such copy was sent.

b. Trustee shall not make any distribution of Funds with respect to any Claim made by Grantor hereunder until:

   (i) It receives the written consent or agreement of EPA with respect to such distribution; or

   (ii) The time period for EPA to dispute such claims in accordance with Section 5 has passed without an Objection Notice from EPA ; or

   (iii) There is a Final Decision with respect to a Disputed Claim ("Final Decision" means an agreement between the parties or a written decision pursuant to Section XVII of the Order).

c. If Trustee received from EPA written notice of consent or agreement to all or part of a Claim, the Trustee shall thereupon promptly pay that portion of the invoice(s) for which EPA has granted consent from the Funds. If the Funds are not sufficient to pay in full any amounts payable under this Section, Trustee shall pay that part of the invoices as can be paid from such Fund.

d. If EPA notifies the Trustee in writing that Grantor has refused to move forward or Grantor is unable to move forward with the Work under the Paragraphs 51, 52 and 53 of the Order and that the

Dispute Resolution process as described in Section XVII (Dispute Resolution) of the Order has been completed, then

(i) EPA shall submit to Trustee invoice(s) for the work conducted pursuant to Paragraphs 51, 52, and 53 of the Order and indicate its approval of all or part of the invoice(s); and,

(ii) Trustee shall pay that portion of the invoice(s) approved by EPA and as directed by EPA.

Section 5. Disputed Claims. EPA may dispute or object to any Claim, in whole or in part, by delivering to the Trustee a notice (an "Objection Notice") within 45 days of EPA's receipt of the claim notice stating:

a. That EPA disputes or objects to such Claim;

b. The reasons for such objections or dispute, set forth in reasonable detail;

c. That EPA has sent a copy of said Objection Notice to Grantor and the date on which such copy was sent; and,

d. The portion of the Claim set forth in the Claim Certificate, if any, which is not disputed or objected to.

Any disputed claims shall be resolved pursuant to Section XVII (Dispute Resolution) of the Order. Trustee shall not pay the disputed portion of any claim until it has received written notice from EPA that the dispute resolution has been completed pursuant to Section XVII of the Order. Such notice shall instruct the Trustee regarding what portion, if any, of the disputed claim should be paid from the Fund.

Section 6. Payments Comprising the Fund. Payments made to the Trustee for the Fund shall consist of cash.

Section 7. Trustee Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

a. Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the

Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2.(a), shall not be acquired or held, unless they are securities or other obligations of the Federal or a State government;

b. The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time not to exceed six days (6) and without liability for the payment of interest thereon.

c. In the absence of timely written direction, the Trustee shall invest the funds in the Wells Fargo Funds "Government Money Market," a money market mutual fund.

d. For the investments made in accordance with Section 7 hereof, the Trustee may purchase or sell to itself or any affiliate, as principal for agent, investments authorized by this Section. Such investment, if registerable, shall be registered in the name of the Trustee for the benefit of the Fund and held by the Trustee. The Trustee may act as purchaser or agent in the making or disposing of any investments. The Trustee shall not be liable for any loss of market value incurred by assets in the Fund so long as such assets consist of Permitted Investments. For purposes of this Agreement, "Permitted Investments" includes United States Treasury and Governmental Agency obligations, repurchase agreements collateralized by United States Treasury and Governmental Agency obligations and shares of a money market mutual fund whose assets consist solely of such permitted obligations.

e. The investments in the Wells Fargo Funds are not obligations of, or endorsed or guaranteed by, the Trustee or its affiliates and are not insured by the Federal Deposit Insurance Corporation. The Trustee serves as investment advisor, custodian and transfer agent for the Wells Fargo Funds and will be paid, and its bank affiliates may be paid, fees for services to the Fund and that those fees may include Processing Organization fees.

f. Such investments will be made as soon as possible following the availability of such funds to the Trustee for investment, taking into consideration the regulations and requirements (including cut-off times) of the Federal Reserve wire system, the investment provider and the Trustee, and compliance with standard operating procedures of such parties.

Investments designation may be changed through written instructions to the Trustee, substantially in the form of a letter specifying other Investment Securities meeting the requirements of the Trust Agreement. Such change in the designation will become effective upon receipt by the Trustee.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, and

To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund. Any taxes in respect of income derived from the investment of funds held or payments made hereunder shall be paid by the Grantor. Grantor agrees to indemnify and hold the Trustee harmless from and against any taxes, additions for late payment, interest, penalties and other expenses that may be assessed against the Trustee on or with respect to any payment or other activities under this Agreement unless any such tax, addition for late payment, interest, penalties and other expenses shall arise out of or be caused by the actions of, or failure to act by, the Trustee. Parties agree that, for tax reporting purposes, all interest or other taxable income earned from the investment of the Funds in any tax year shall be taxable to Grantor. Grantor shall, within 30 days after the date hereof, provide the Trustee with certified tax identification numbers by furnishing appropriate forms W-9 or W-8 and other forms and documents that the Trustee may reasonably request. The parties hereto understand that if such tax reporting documentation is not so certified to the Trustee, the Trustee may be required by the Internal Revenue Code of 1986, as amended, to withhold a portion of any interest or other income earned on the investment of monies or other property held by the Trustee pursuant to this Agreement.

Section 10. Annual Valuation. The Trustee shall annually, at least 30 days prior to the anniversary date of establishment of the Fund, furnish to the Grantor and to EPA Region 10 Regional Administrator with copies to the EPA Project Manager and EPA Assistant Regional Counsel identified in the Notice list ("EPA Project Attorney") a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the EPA Regional Administrator with copies to the EPA Project Manager and EPA Project Attorney shall constitute a conclusively binding assent by the Grantor, barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 11. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 12. Trustee Compensation. Trustee is entitled to compensation in accordance with "Schedule B" attached hereto and incorporated herein by reference and shall be payable in accordance with Section 9.

Section 13. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. The Trustee must give the Grantor and EPA sixty (60) days written notice of its intent to resign. If for any reason the Grantor cannot or does not act within the sixty day (60) period to appoint a successor Trustee and the EPA does not appoint a successor trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the EPA Regional Administrator, and the present Trustee by certified mail 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 9.

Section 14. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by Grantor's Executive Vice President or Chief Financial Officer. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the EPA to the Trustee shall be in writing, signed by the EPA Region 10 Regional Administrator, or his designees, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or EPA hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or EPA, except as provided for herein.

Section 15. Notice of Nonpayment. If no payment is received from the Grantor within thirty days (30) days of the date that the specific payment is due as described in Schedule A, then the Trustee shall notify in writing the Grantor and EPA Region 10 Regional Administrator with copies to the EPA Project Manager and EPA Project Attorney, by certified mail within 10 days following the expiration of the 30-day period, that the payment from the Grantor has not been received as required in Schedule A.

Section 16. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the EPA Region 10 Regional

Administrator or by the Trustee and the EPA Region 10 Regional Administrator if the Grantor ceases to exist.

Section 17. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 16, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the EPA Regional Administrator, or by the Trustee and the EPA Regional Administrator, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses shall be delivered to the Grantor.

Section 18. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the EPA Regional Administrator, issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 19. Notices. All notices, requests, demands, and other communications under this Agreement shall be in writing and shall be deemed to have been duly given (a) on the date of service if served personally on the party to whom notice is to be given, (b) on the day of transmission if sent by facsimile transmission to the facsimile number given below, and telephonic confirmation of receipt is obtained promptly after completion of transmission, (c) on the day after delivery to Federal Express or similar overnight courier or the Express Mail service maintained by the United States Postal Service, or (d) on the fifth day after mailing, if mailed to the party to whom notice is to be given, by first class mail, registered or certified, postage prepaid, and properly addressed, return receipt requested, to the party as follows:

If to GRANTOR:

Georgia Baxter
Executive Vice President
J.H. Baxter & Company
1700 South El Camino Real
San Mateo, CA 94402-0902
Tel: 650-349-0201
Fax: 650-570-6878

And

John Sonksen
Chief Financial Officer/Vice President
J.H. Baxter & Company
1700 South El Camino Real
San Mateo, CA 94402-0902
Tel: 650-349-0201
Fax: 650-570-6878

If to TRUSTEE:

Wells Fargo Bank, National Association
Attn: Kimberly A. Vann
707 Wilshire Boulevard, 17th Floor
Los Angeles, CA 90017
Tel: 213-614-3352
Fax: 213-614-3355

If to EPA:

Regional Administrator
U. S. Environmental Protection Agency
Region 10
Mail Stop RA-140
1200 Sixth Avenue
Seattle, WA 98101
Tel: 206-553-1234
Fax: 206-553-1809

with copies to:

Kimberly Ogle
EPA Project Manager
U. S. Environmental Protection Agency
Region 10
Mail Stop WCM-126
1200 Sixth Avenue
Seattle, WA 98101
Tel: 206-553-0955
Fax: 206-553-8509

Jennifer G. MacDonald, Esq.
Office of Regional Counsel
U. S. Environmental Protection Agency
Mail Stop ORC-158
1200 Sixth Avenue,
Seattle, WA 98101
Tel: 206-553-8311
Fax: 206-553-0163

Grantor, Trustee or EPA may change the designated recipient under this Section by sending a written notice to the other Party and the Beneficiary. Such change shall be effective ten (10) days after receipt.

Section 20. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the State of California.

Section 21. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

Section 22. Copies. Original signature copies of the Agreement will be provided to EPA, Grantor and Trustee.

In Witness Whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written:

[Signature of Grantor]
[Title]

[Title]
[Seal]

[Signature of Trustee]

[Title]
[Seal]

State of_____

County of_____

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that she/he signed her/ his name thereto by like order.

Schedule A

Contribution of Funds into the Trust Fund

1. **Initial Contribution** Within 30 days of the effective date of the Order, the Fund shall be established initially as consisting of cash in the amount of five hundred thousand dollars ($500,000).

2. **Subsequent Contributions.** Baxter shall make two additional contributions to the Fund of two hundred and fifty thousand dollars ($250,000) each. The first of these payments will be made twelve months after the effective date of the Order and the second payment shall be made eighteen months after the effective date of the Order. If the balance in the account falls below one hundred thousand dollars ($100,000), Baxter will within thirty days accelerate the next payment into the Fund.

Schedule B

Corporate Trust Services
707 Wilshire Blvd., 17th Floor
Los Angeles, CA 90017
Tel: (213) 614-3351
Fax: (213) 614-3355

SCHEDULE OF FEES
to act as TRUSTEE for
J.H. Baxter & Company

Acceptance Fee: **$500.00**

Initial Fees as they relate to Corporate Trust Services acting in the capacity of Trustee, includes creation and examination of the Trust Agreement; acceptance of the Trust appointment; setting up of a Trust Account and accounting records; and the coordination of receipt of funds for deposit to the Trust Account. Acceptance fee payable at time of Trust Agreement execution.

Trustee Annual Administration Fee: **$1,500.00**

For ordinary services of the Trustee, including normal administration of the Trust Account. Ordinary services include: daily routine account management; investment transactions; cash transaction processing, including wires and check processing; monitoring claim notices pursuant to the agreement; disbursement of the funds in accordance with the agreement; and trust account statements sent to all applicable parties. Payable in advance, with the first installment payable at the time of Trust Agreement execution. This fee will not be prorated in the case of early termination. Tax reporting is not included.

Wells Fargo's bid is based on the following assumptions:

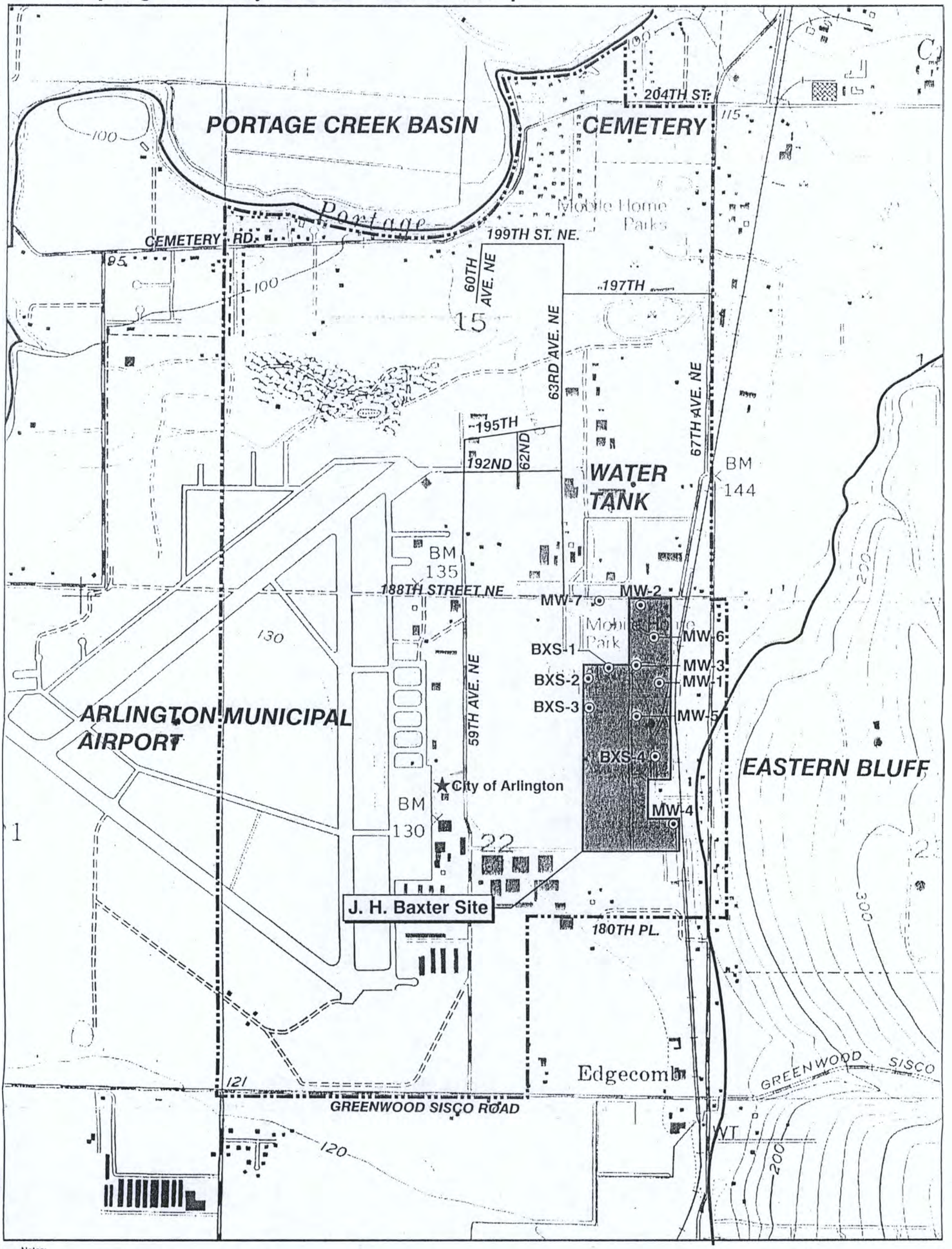
- Number of Trust funds/accounts to be established: One (1)
- Number of Deposits to Trust Fund: Not more than Five (5) year
- Number of Withdrawals from Trust Fund: Not more than Twenty (20) per year; $50 for each additional withdrawal
- Period of time for Trust to be in existence: Indefinite
- **ALL FUNDS WILL BE INVESTED IN ONE OF SEVERAL WELLS FARGO MONEY MARKET FUNDS**
- **ALL FUNDS WILL BE RECEIVED FROM OR DISTRIBUTED TO A DOMESTIC ENTITY**
- **TRUSTEE IS NOT RESPONSIBLE FOR TAX REPORTING - IF TRUSTEE PROVIDES TAX REPORTING SERVICES, A MINIMUM ADDITIONAL $1000 CHARGE WILL BE ASSESSED PER YEAR**

Out-of Pocket Expenses: **At Cost**

All out-of-pocket expenses will be billed in addition to the above, such as airborne or federal express, outside accounting firms, publication costs, and/or travel expenses of bank officers attending closing outside of the Southern California area, etc.

Submitted by: John T. Deleray – 4/09/2001 (Revised)
Vice President/Business Development
Wells Fargo Bank
(213) 614-3351

Sampling Boundary and Well Location Map



Notes:
Base map prepared from USGS 7.5 minute quadrangle map of Arlington West, Washington, dated 1981. Township 31N, Range 5E.

⊙ MW-1 Baxter Site Monitoring Well Location and Number

★ City of Arlington Water Supply Well

Water Well Sampling Boundary

N

0 1000 2000

Scale in Feet

HARTCROWSER

J-7026-04 3/01

Figure 2

DTN 3/30/01 702604D.cdr

Figure 1

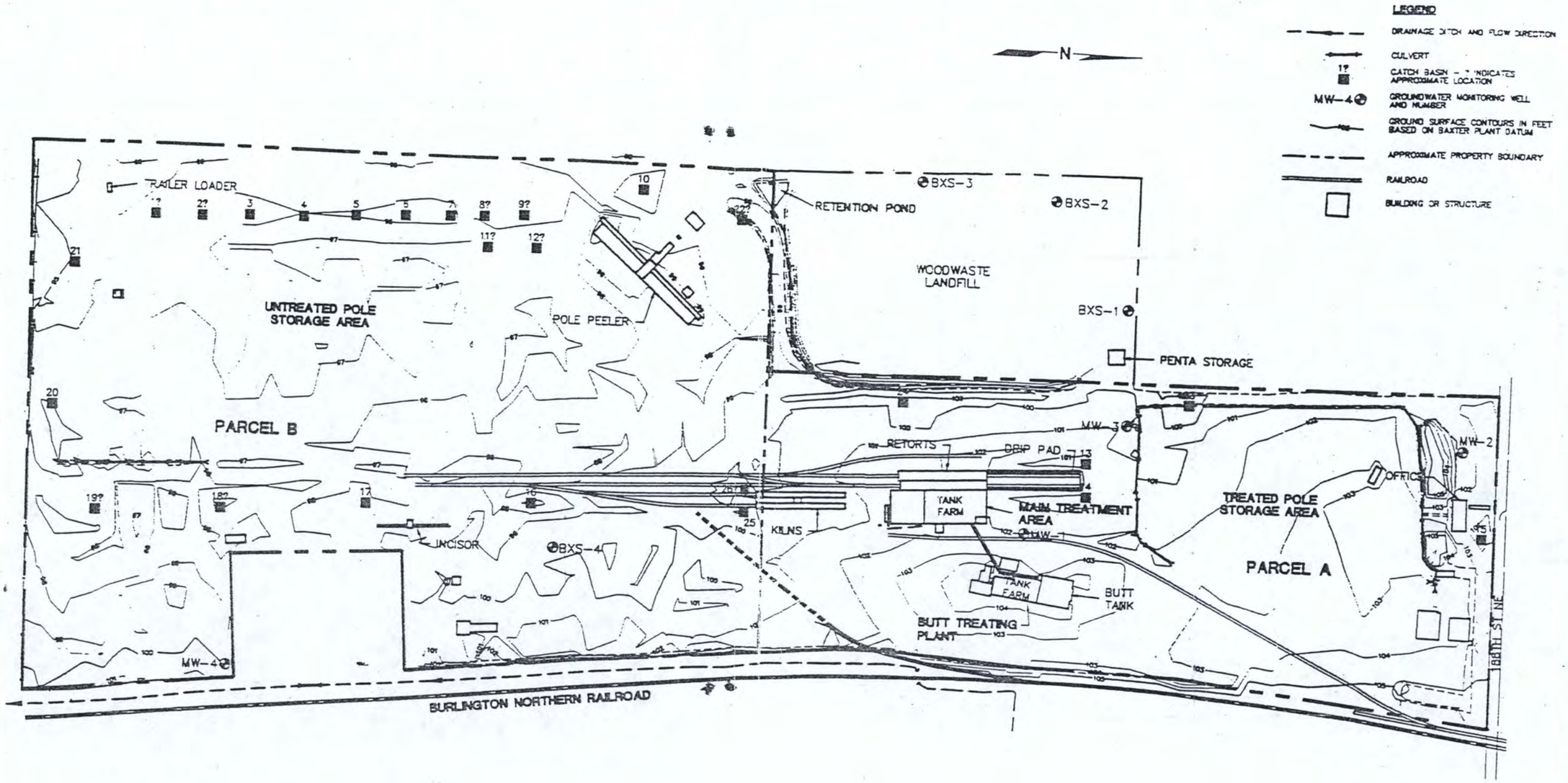
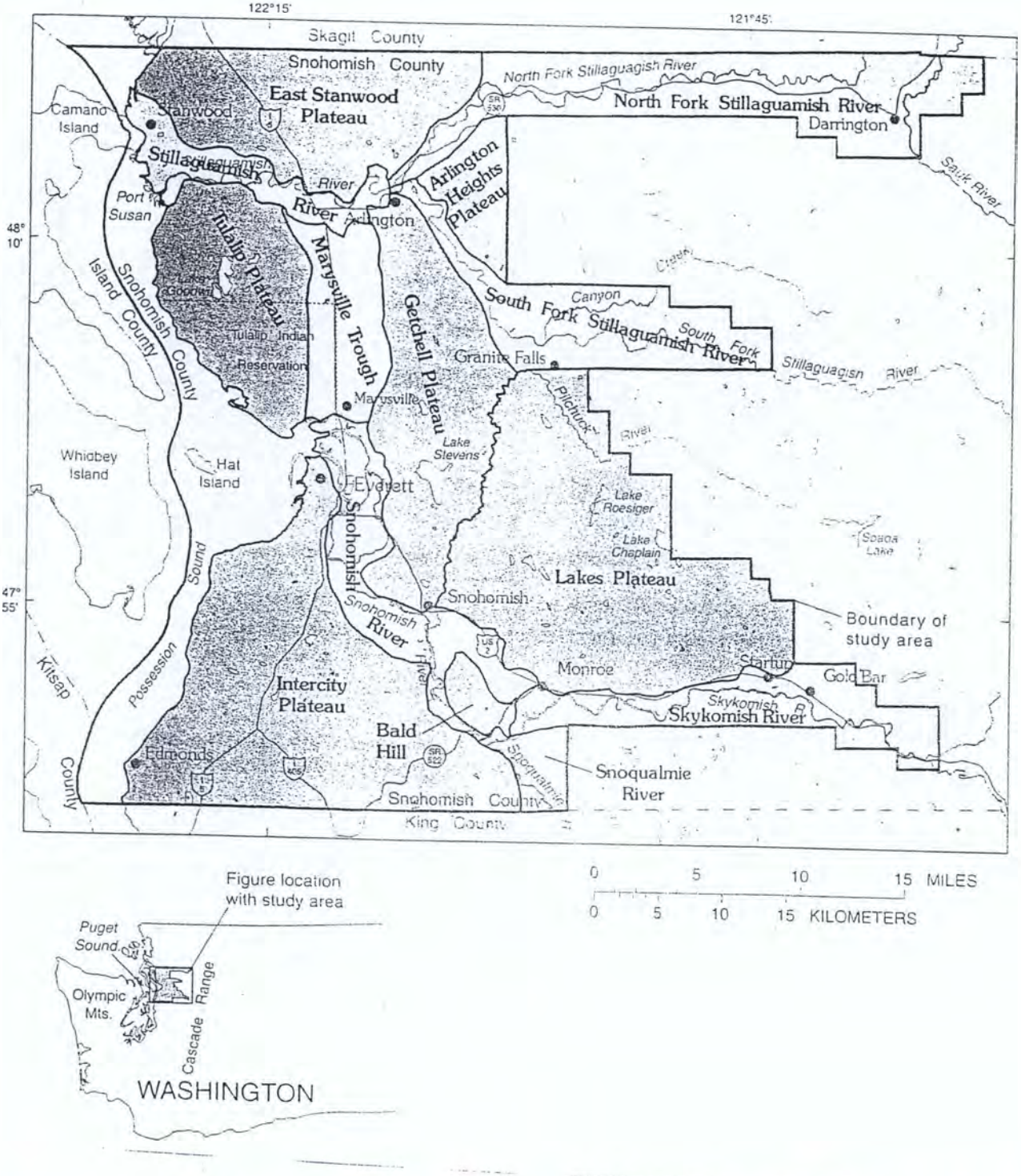
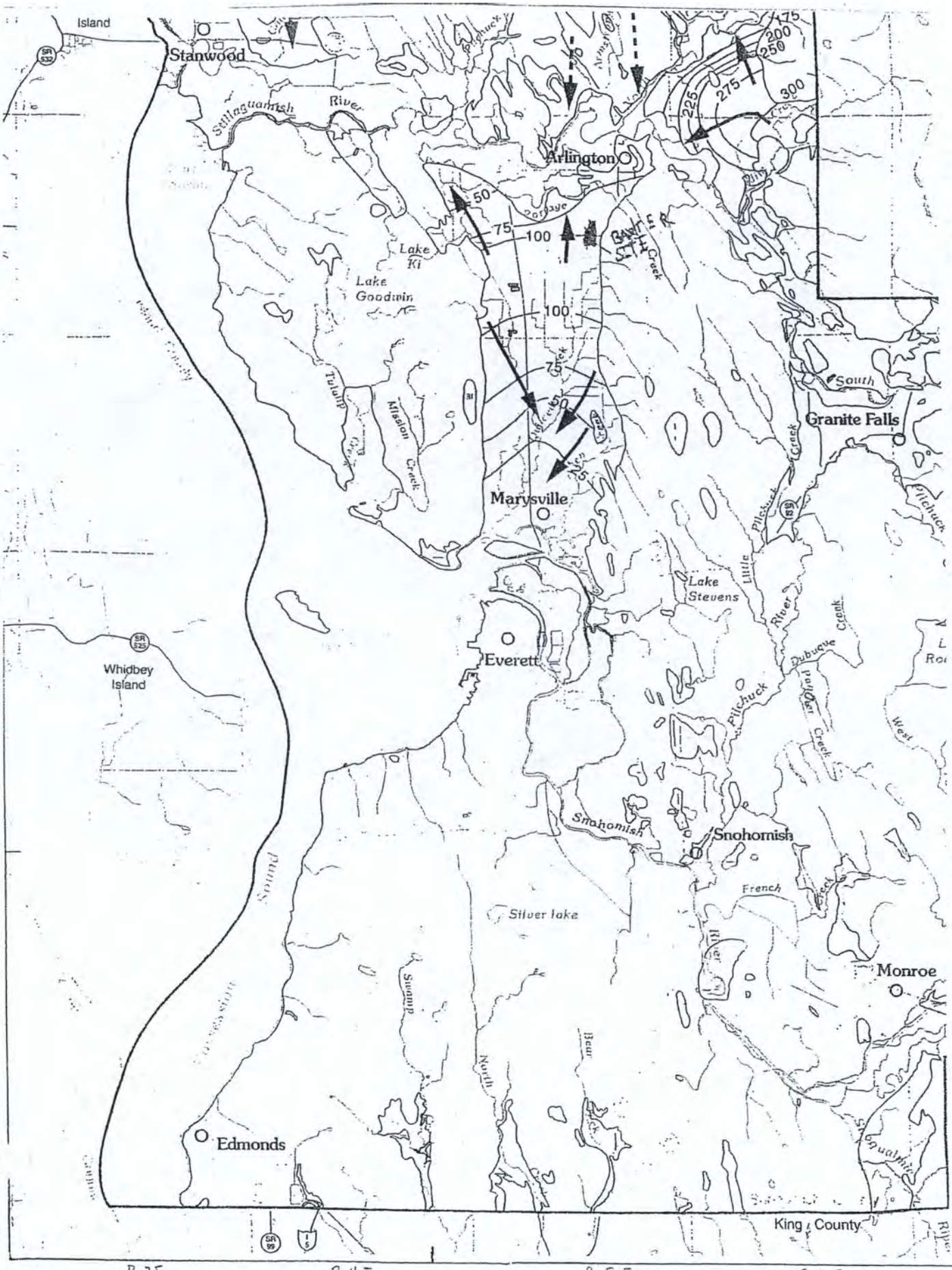


Figure 2



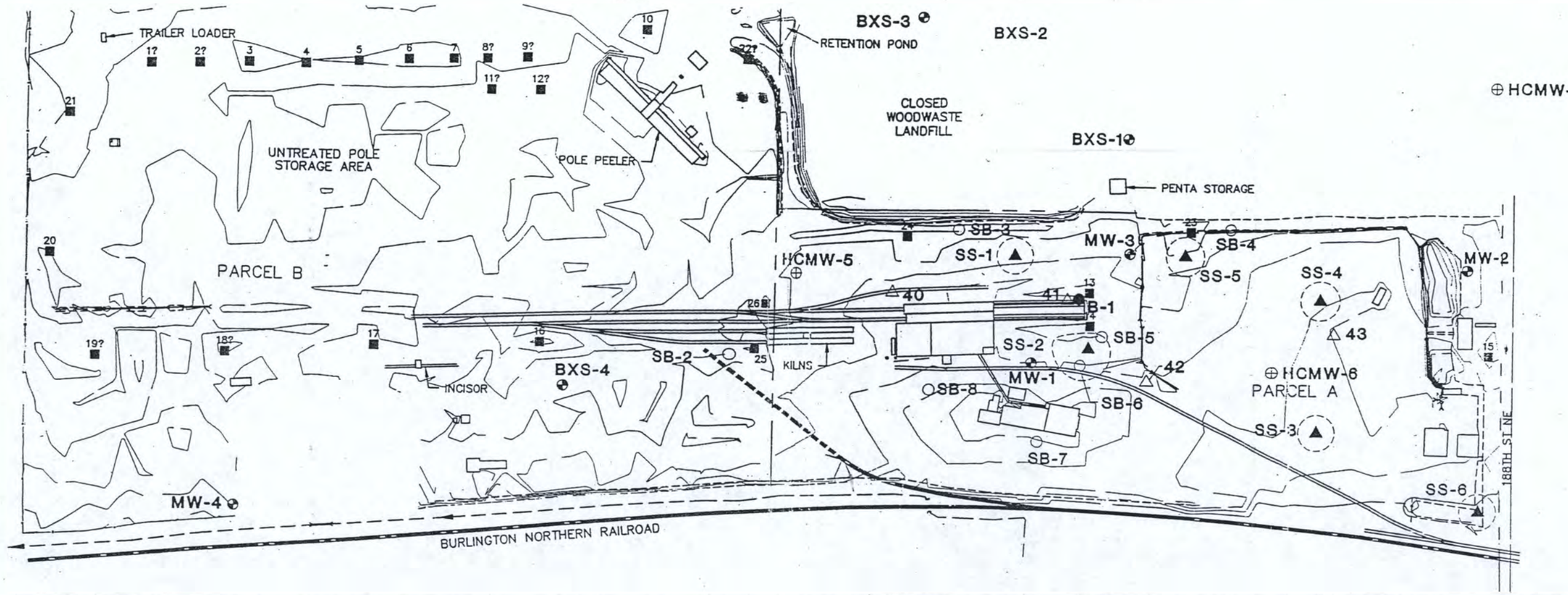
From: B.E. Thomas, J.M. Wilkinson, and S.S. Embrey
U.S. Geological Survey Water-Resources Investigation Report 96-4312, The Ground-Water System and Ground-Water Quality in Western Snohomish County, Washington

Figure 3



From: B. E. Thomas, J. M. Wilkinson, and S. S. Embrey, U.S. Geological Survey, Water-Resources Investigation Report 96-4312, The Ground-Water System and Ground-Water Quality in Western Snohomish County, Washington

Figure 4



Drainage Ditch and Flow Direction (From ACI, 1998)

Culvert

Catch Basin – ? Indicates Approximate Location

Ground Surface Elevation Contour in Feet Based on Baxter Plant Datum

Approximate Property Parcel Boundary

Baxter Site Boundary

Railroad

Building or Structure

Note: Survey by Clark Leaman Surveying, January 1996.

Proposed Exploration Location and Number

⊕HCMW-5 Monitoring Well

SB-2 Soil Boring

▲ SS-1 Composite Surface Sample (See Table 6 for details on sampling and analysis at these locations.)

Existing Exploration Location and Number

MW-4 Monitoring Well

B-1 Soil Boring

△42 Surface Soil Sample

N

0 200 400

Scale in Feet

From: September 27, 1999, Final Work Plan, J.H. Baxter Arlington Plant Remedial Investigation/Feasibility Study, Arlington, Washington, prepared by Hart Crowser

Table 10 - Statistical Summary of Analytical Results for Storm Water Samples

Analyte	Detection Frequency	Range	Maximum Detection	Location of Maximum Detect.	Screening Level (a)	Exceedence Frequency
Dioxins in pg/L						
TEF Equivalent	13/13	.36 to 13568	13568	Drains 13/14	1.0	12/13
Nonchlorinated Semivolatiles in µg/L						
Acenaphthene	0/40	1 U to 10 U	N/A			
Acenaphthylene	0/40	1 U to 35 U	N/A			
Anthracene	0/40	.1 U to 1 U	N/A			
Benzo(a)anthracene	4/40	.1 U to 1 U	0.9	Drains 13/14		
Benzo(a)pyrene	10/40	.1 to 1.8	1.8	Drain 13		
Benzo(b)fluoranthene	9/40	.2 U to 2.5	2.5	Drain 13		
Benzo(g,h,i)perylene	5/40	.2 U to 2 U	0.8	Drains 13/14		
Benzo(k)fluoranthene	11/40	.1 to 1.2	1.2	Drain 13		
Chrysene	19/40	.1 to 2.6	2.6	Drain 13		
Dibenz(a,h)anthracene	1/40	.1 to 1 U	0.1	Drains 13/14		
Fluoranthene	3/40	.2 U to 11 U	5.1	Drains 13/14		
Fluorene	0/40	.2 U to 2 U	N/A			
Indeno(1,2,3-cd)pyrene	6/40	.1 U to 2 U	0.7	Drains 13/14		
Naphthalene	0/40	1 U to 10 U	N/A			
Phenanthrene	10/40	.1 to 5 U	2	Drains 13/14		
Pyrene	3/40	.2 to 30 U	6.8	Drains 13/14		
Total PAHs	10/75	.148 to 84.8 U	34.1	Drains 13/14		
Total cPAHs	1/5	.2 U to .9	0.9	Drains 13/14		
Chlorinated Phenols in µg/L						
2,4,6-Trichlorophenol	0/40	.5 U to 50 U	N/A			
Pentachlorophenol	130/130	.8 to 960	960	Drain 24	1.0	129/130
Total Tetrachlorophenols	28/40	.5 U to 50 U	15	Drain 24; Drains 13/14		
Conventionals in mg/L						
Total Suspended Solids	130/130	5 to 19900	19900	Untreat. Wood-3/1-5/31/95		
pH	130/130	6.01 to 8.82	8.82	Drain 25	6.5-8.5	3/130
TPH in mg/L						
Oil & Grease	100/127	1 to 16	16	Drain 25	10	4/127

U = Not detected at indicated detection limit.

2,3,7,8-TCDD TEF Equivalent was calculated using detected dioxin results multiplied by the corresponding Toxic Equivalency Factor.

(a) Based on NPDES permit requirements.

[1]This Table is Table 10 from the October 27, 2000, Response to EPA Comments on the Draft RI Report, prepared by Hart Crowser

Table 2
Concentrations of PCP (ug/L) in Stormwater from Parcel B[1]

Sampling Period	Parcel B Drain Number 10, 11 and 16-22
09/01-11/31/94	7
12/01-12/31/95	73
03/01-05/31/95	34
09/01-11/30/95	18
12/01-02/28/96	64.5
03/01-05/31/96	30
09/01-11/30/96	40
12/01-02/28/97	28

[1]This table has been extracted out of Table 1 of the July 30, 1997, Stormwater AKART Analysis, Baxter Facility, Arlington, Washington, prepared by AGI Technologies for Respondent.

Table 3
J. H. Baxter Pentachlorophenol (PCP) Concentrations in Ground Water
PCP Ground Water Data in µg/L (ppb)

Date	BXS-1	BXS-2	BXS-3	BXS-4	BXS-5[15, 18] BXS-6[15, 19]	MW-1	MW-2	MW-3	MW-4	MW-6[15, 19]	Other as specified
8/1/90	74	10U	10U	10U		10U	10U	10U			
8/1/91	52	0.6	0.2U	1.3		0.2U	8.3	440			
10/1/91	----	----	0.5	----		----	8.3	210 MW-3A 210 MW-3B 440			
3/1/92	49	0.7	0.8	0.5		0.1	0.4	ND			
8/1/92	100	2.1	ND	ND		0.2U	0.2U	250			
3/1/93	91	0.2U	NM	NM		ND	ND	190			
6/1/93	100	ND	NM	NM		NM	1.5	430			
9/1/93	110	ND	NM	NM		ND	NM	NM			
12/1/93	110	ND	NM	NM		NM	NM	750			MW-30 [15,19] 530 (D 200x)[16]
8/15/94	5	(8/16) ND	(8/16)ND	ND		(8/16)ND	9 [15]	230 [15] (D100x)[16]			
11/30/94	19[15] (D10x)	ND	ND	(11/29)---		(11/29) ND	(11/29)---	(11/29) 480[15] 530[15] (D200x)[16]	(11/29)ND		

Date	BXS-1	BXS-2	BXS-3	BXS-4	BXS-5[15, 18] BXS-6[15, 19]	MW-1	MW-2	MW-3	MW-4	MW-6[15, 19]	Other as specified
2/16/95	ND	(2/17) ND	ND	ND		ND	2.1	(2/15)ND	ND		
4/27/95	335	----	(4/28)ND	ND		(4/26)N D	(4/26)0.6	(4/26)3.4	(4/26)0.6		
8/1/95	34	0.7	ND	ND		(7/31)1.6	(7/31)0.6	(7/31)145	ND	MW-5 0.8	MW-30 [15,19] 150 (D50x)[16]
10/10/95	30.5	(10/11) ND	(10/11) 1	(10/11) ND		(10/9)N D	(10/9)1.1	(10/9)115	(10/9)ND		
1/11/96	59	0.6	ND	ND		(1/10)0.5	(1/10)3.9	(1/10)470	(1/10)ND		
4/18/96	28.5 25[15]	ND	ND	(4/17)ND	BXS-5 ND[15] BXS-6 32[15]	(4/18)N D	(4/17)7.1	(4/17)135 140[15]	(4/17)ND	MW-5 ND[15]	MW-30[15, 19] 150 MW-5 ND
7/18/96	16 14[15]	ND	ND	(7/17)ND	BSX-6 18	(7/17)N D	(7/17)4.6	(7/17)300	(7/17)ND	MW-5 ND[15]	MW-30 [15,19] 300
9/25/96	29	(9/26)--- -	(9/26)ND	ND		ND	3.3	320	ND		
1/14/97	22.5	ND	ND	(1/13)ND		ND	(1/13)3	(1/13)58.5	(1/13)ND		
4/9/97	37	ND	ND	ND		ND	2.8	0.9	ND		
8/6/97	43	ND	ND	ND		ND	1.3	17.5	ND		
10/6/97	33	ND	ND	ND		ND	3.8	295	ND		

Date	BXS-1	BXS-2	BXS-3	BXS-4	BXS-5[15, 18] BXS-6[15, 19]	MW-1	MW-2	MW-3	MW-4	MW-6[15, 19]	Other as specified
1/15/98	35/34[1]	ND/ 0.5U[3]	ND/0.5U[5]	ND/0.5U[7]		ND/0.5U[9]	(1/14)2.5	210/220[11]	ND/0.5U[13]		
4/15/98	23/17[2]	ND/ 0.5U[4]	ND/0.5U[6]	ND/0.5U[8]		ND/ 0.5U[10]	0.7	27.5/27[12]	ND/0.5U[14]	MW-5[18] ND[15] MW-6 28	
7/16/98	9.8	0.5U	0.5U	0.5U		(7/15)0.5 U	(7/15)1	(7/15)510	(7/15)0.5U		
10/6/98	27	0.5U	0.5U	0.5U		0.5U	4.6	570	0.5U	MW-6 670 [15] MW-5 ND	
1/12/99	39	0.5U	0.5U	0.5U	BSX-6 36						
1/21/99						ND 0.5U	3.6	360	ND 0.5U	MW-6 280 [15] MW-5 ND	
4/13/99	36	1.4	0.5U	0.5U		0.5U	0.9	3.9	0.5U		
7/21/99	21	0.5U	0.5U	0.5U		0.5U	1.4	300	0.5U		
10/4/99	23	(10/5) 0.5U	(10/5) 0.5U	(10/5) 0.5U		0.5U	2.1	(10/5)870	(10/5)0.5U		
10/8/99											BT-S-GW 58000 BTW-GW 22000[17]

Date	BXS-1	BXS-2	BXS-3	BXS-4	BXS-5[15, 18] BXS-6[15, 19]	MW-1	MW-2	MW-3	MW-4	MW-6[15, 19]	Other as specified
10/22/00											HCMW-5 0.5 U[17] HCMW-6 0.5 U[17]
1/11/00											HCMW-5 0.5 U[17] HCMW-6 0.5 U[17]
1/13/00	35	(1/11) 0.5U	(1/11) 0.5U	(1/11) 0.5U		(1/11) 0.5U	0.5U	0.5U	(1/11) 0.5U		

(no data available prior to 8/1/90)

[1] reported as 35 in Table A-2 of the RI Work Plan, but 34 in Table B-3 of the RI Report.

[2] reported as 23 in Table A-2 of the RI Work Plan, but 17 in Table B-3 of the RI Report.

[3] reported as ND in Table A-2 of the RI Work Plan, but 0.5U in Table B-3 of the RI Report.

[4] reported as ND on 4/15/98 in Table A-2 of the RI Work Plan, but 0.5U on 4/16/98 in Table B-3 of the RI Report.

[5] reported as ND in Table A-2 of the RI Work Plan, but 0.5U in Table B-3 of the RI Report.

[6] reported as ND on 4/15/98 in Table A-2 of the RI Work Plan, but 0.5U on 4/16/98 in Table B-3 of the RI Report.

[7] reported as ND on 1/15/98 in Table A-2 of the RI Work Plan, but 0.5U on 1/14/98 in Table B-3 of the RI Report.

[8] reported as ND on 4/15/98 in Table A-2 of the RI Work Plan, but 0.5U on 4/16/98 in Table B-3 of the RI Report.

[9] reported as ND on 1/15/98 in Table A-2 of the RI Work Plan, but 0.5U on 1/14/98 in Table B-3 of the RI Report.

[10] reported as ND in Table A-2 of the RI Work Plan, but 0.5U in Table B-3 of the RI Report.

[11] reported as 210 on 1/15/98 in Table A-2 of the RI Work Plan, but 220 on 1/14/98 in Table B-3 of the RI Report.

[12] reported as 27.5 in Table A-2 of the RI Work Plan, but 27 in Table B-3 of the RI Report.

[13] reported as ND in Table A-2 of the RI Work Plan, but 0.5U in Table B-3 of the RI Report.

[14] reported as ND in Table A-2 of the RI Work Plan, but 0.5U in Table B-3 of the RI Report.

[15]reported in Columbia Analytical Services Lab Reports

[16]D100x is Diluted sample 100 times

[17]Draft RI Report March 10, 2000, Table B-3

[18]Wells BXS-5 and MW-5 are field blanks.

[19]Wells BXS-6 is a field duplicate of BSX-1, MW-6 is a field duplicate of MW-3, MW-30 is a field duplicate MW-3.

Table 4[1]

Table B-5 - Dioxin Results for Surface Water and Groundwater Samples

Sample ID	MW-2	MW-3	MW-3	BXS-1	BXS-1	MW-2
Sampling Date	1/13/00	10/5/99	1/13/00	10/4/99	1/13/00	10/4/99
Dioxins in pg/L						
2378-TCDD	2.282 U	3.862 U	2.93 U	4.998 U	2.762 U	3.693 U
12378-PeCDD	4.524 U	3.921 U	3.117 U	4.612 U	2.58 U	103.196
123478-HxCDD	2.101 U	3.198 U	1.676 U	3.423 U	1.93 U	262.243
123678-HxCDD	1.8 U	6.48	1.473 U	3.252 U	1.695 U	781.167
123789-HxCDD	1.795 U	7.04	1.456 U	3.155 U	1.678 U	569.969
1234678-HpCDD	68.221	244.866	6.783 X	6.641	4.296 X	25496.7
OCDD	654.07 B	2644.25	70.488 B	78.237	31.533 BX	228345
2378-TCDF	2.74 U	4.806 U	3.586 U	6.651 U	3.932 U	6.083 U
12378-PeCDF	3.224 U	3.206 U	2.03 U	3.936 U	1.673 U	8.434 U
23478-PeCDF	3.096 U	2.838 U	1.969 U	3.814 U	1.63 U	7.576 U
123478-HxCDF	10.286 I	32.97	1.925 U	4.349 U	1.28 U	3102.41
123678-HxCDF	3.03 U	7.827 U	1.835 U	4.226 U	1.278 U	249.855 U
123789-HxCDF	3.35 U	9.881 U	2.014 U	5.846 U	1.381 U	370.885 U
234678-HxCDF	4.61 U	7.629 U	2.715 U	4.688 U	1.873 U	276.499 U
1234678-HpCDF	6.201 X	63.067	3.529 U	4.69 U	1.165 U	3294.05
1234789-HpCDF	5.967 U	13.608 U	4.805 U	6.949 U	1.543 U	383.684 U
OCDF	57.903	320.309	7.185	5.211 U	1.875 U	17067.2
TCDDs (Total)	2.282 U	3.862 U	2.93 U	4.998 U	2.762 U	3.693 U
PeCDDs (Total)	4.524 U	3.921 U	3.117 U	4.612 U	2.58 U	249.241
HxCDDs (Total)	1.8 U	15.095	1.473 U	3.252 U	1.695 U	3248.59
HpCDDs (Total)	117.51	244.866	2.69 U	3.7 U	4.607	25496.7
TCDFs (Total)	2.74 U	4.806 U	3.586 U	6.651 U	3.932 U	35.993
PeCDFs (Total)	3.096 U	2.838 U	1.969 U	3.814 U	1.63 U	166.117
HxCDFs (Total)	3.03 U	15.83	1.835 U	4.226 U	1.278 U	1562.07
HpCDFs (Total)	23.654	10.84 U	3.529 U	6.47	1.165 U	4644.99
TEF Equivalent	2.485	10.69	0.1455	0.1446	0.0745	1056

[1]This Table is extracted from Table B-5 of the March 10, 2000, Draft Remedial Investigation Report, J.H. Baxter Arlington Plant, Arlington Washington

Table 8 - Statistical Summary of Analytical Results for Surface Soil Samples

Analyte	Detection Frequency	Range	Maximum Detection	Location of Maximum Detect.	Direct Contact (a)	Exceedence Frequency	Protection of GW	Exceedence Frequency
Nonchlorinated Semivolatiles in mg/kg								
Acenaphthene	1/4	.046 J to .9 U	0.046 J	40-3/25/92	210000	0/4		
Anthracene	3/4	.375 to .9 U	0.87	40-3/25/92	1050000	0/4		
Benzo(a)anthracene	2/4	.39 U to 2.6	2.6	40-3/25/92	17.98	0/4		
Benzo(a)anthracene	2/4	.39 U to 2.6	2.6 J	42-3/25/92	17.98	0/4		
Benzo(a)pyrene	2/4	.39 U to 2.3 J	2.3 J	40-3/25/92	17.98	0/4		
Benzo(b)fluoranthene	4/4	.18 J to 8.2 J	8.2 J	40-3/25/92	17.98	0/4		
Chrysene	4/4	.17 J to 2.6	2.6	40-3/25/92	17.98	0/4		
Dibenz(a,h)anthracene	2/4	.16 J to 1.2 J	1.2 J	40-3/25/92				
Fluoranthene	4/4	.16 J to 9.2	9.2	40-3/25/92	140000	0/4		
Fluorene	1/4	.11 J to .9 U	0.11 J	40-3/25/92	140000	0/4		
Pyrene	4/4	.26 J to 13 J	13 J	42-3/25/92	105000	0/4		
Total cPAHs	4/4	.35 to 16.9	16.9	40-3/25/92			22 (c)	0/4
Chlorinated Phenols in mg/kg								
2,4,6-Trichlorophenol	0/19	.005 U to 5 U	N/A					
Pentachlorophenol	23/23	.015 to 1900 J	1900 J	42-3/25/92	1094	1/23	3.1 (c)	17/23
Total Tetrachlorophenols	5/19	.005 U to 10	10	SB-5 S-1	105000	0/19	530 (c)	0/19
Dioxins in ng/kg								
TEF Equivalent	5/5	1161 to 8248	8248	SS-3-S	875 (a)	5/5	8900 (c)	0/5
TPH in mg/kg								
Diesel	0/5	25 U to 25 U	N/A				2000 (b)	0/5
Heavy Fuel Oil	0/5	100 U to 100 U	N/A				2000 (b)	0/5
Jet Fuel as Jet A	0/5	25 U to 25 U	N/A				2000 (b)	0/5
Kerosene	0/5	25 U to 25 U	N/A				2000 (b)	0/5
Lube Oil	3/5	60 J to 630	630	SS-1-S			2000 (b)	0/5
Mineral Spirits	0/5	25 U to 25 U	N/A				2000 (b)	0/5
Non-PHC as Diesel	0/5	100 U to 100 U	N/A				2000 (b)	0/5
PHC as Diesel	1/5	100 U to 1400	1400	SS-2-D			2000 (b)	0/5

U = Not detected at indicated detection limit.

J = Estimated value.

(a) Using MTCA Method C Cleanup Level for Industrial Soils.

(b) Proposed MTCA Method A Cleanup Level.

(c) Modified MTCA Method B Cleanup Level.

[1]This Table is Table 8 taken from the October 27, 2000, Response to EPA Comments on the Draft RI Report, prepared by Hart

Table 9 - Statistical Summary of Analytical Results for Subsurface Soil Samples

Analyte	Detection Frequency	Range	Maximum Detection	Location of Maximum Detec	Direct Contact (a)	Exceedence Frequency	Protection of GW	Exceedence Frequency
Nonchlorinated Semivolatiles in mg/kg								
Acenaphthene	2/10	.084 to 58	58	SB-6 S-6	210000	0/10		
Acenaphthylene	2/10	.003 J to 1.2	1.2	SB-6 S-6				
Anthracene	2/10	.087 to 31	31	SB-6 S-6	1050000	0/10		
Benzo(a)anthracene	2/10	.041 to 8.9	8.9	SB-6 S-6	17.98	0/10		
Benzo(a)pyrene	2/10	.017 to 3.7	3.7	SB-6 S-6	17.98	0/10		
Benzo(b)fluoranthene	2/10	.014 to 2.9	2.9	SB-6 S-6	17.98	0/10		
Benzo(g,h,i)perylene	2/10	.006 to 1.1	1.1	SB-6 S-6				
Benzo(k)fluoranthene	2/10	.017 to 4.1	4.1	SB-6 S-6	17.98	0/10		
Chrysene	2/10	.043 to 9.1	9.1	SB-6 S-6	17.98	0/10		
Dibenz(a,h)anthracene	1/10	.005 U to .6	0.6	SB-6 S-6				
Fluoranthene	2/10	.17 U to 51	51	SB-6 S-6	140000	0/10		
Fluorene	2/10	.14 to 68	68	SB-6 S-6	140000	0/10		
Indeno(1,2,3-cd)pyrene	2/10	.009 to 1.6	1.6	SB-6 S-6	17.98	0/10		
Naphthalene	2/10	.009 to 68	68	SB-6 S-6	140000	0/10		
Phenanthrene	2/10	.17 U to 150	150	SB-6 S-6				
Pyrene	3/10	.15 to 39	39	SB-6 S-6	105000	0/10		
Total cPAHs	2/10	.17 U to 30.9	30.9	SB-6 S-6			2 (e)	1/8
Chlorinated Phenols in mg/kg								
2,4,6-Trichlorophenol	0/25	.005 U to 50 U	N/A					
Pentachlorophenol	27/33	.001 J to 1400	1400	BT-W S-7	1094	1/33	.28/0.012(b)(d)	14/33
Total Tetrachlorophenols	5/25	.005 U to 40 J	40 J	BT-W S-7	105000	0/25	48 (e)	0/25
Dioxins in ng/kg								
TEF Equivalent	2/2	79 to 7092	7092	SB-6-S-6	875	1/2	809/32(b)(d)	2/2
TPH in mg/kg								
Diesel	3/10	20 J to 17000	17000	SB-6 S-6			2000 (c)	1/10
Heavy Fuel Oil	0/10	100 U to 100 U	N/A				2000 (c)	0/10
Jet Fuel as Jet A	0/10	25 U to 25 U	N/A				2000 (c)	0/10
Kerosene	0/10	25 U to 25 U	N/A				2000 (c)	0/10
Lube Oil	0/10	100 U to 100 U	N/A				2000 (c)	0/10
Mineral Spirits	0/10	25 U to 25 U	N/A				2000 (c)	0/10
Non-PHC as Diesel	0/10	100 U to 100 U	N/A				2000 (c)	0/10
PHC as Diesel	3/10	100 U to 56000	56000	BT-W S-7			2000 (c)	3/10

U = Not detected at indicated detection limit; J = Estimated value.

(a) MTCA Method C Cleanup Level for Industrial Soils.

(b) Modified MTCA Method B Cleanup Level.

(c) Proposed MTCA Method A Cleanup Level.

(d) Unsaturated/saturated zone.

(e) Standard MTCA Method B Cleanup Level.

[1]This Table is Table 9 taken from the October 27, 2000 Response to EPA Comments on the Draft RI Report, prepared by Hart Crowser